

OCTOBER, 1953

BUTANE-PROPANE

News

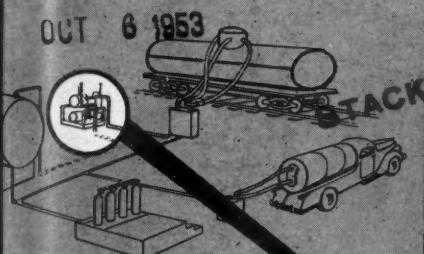
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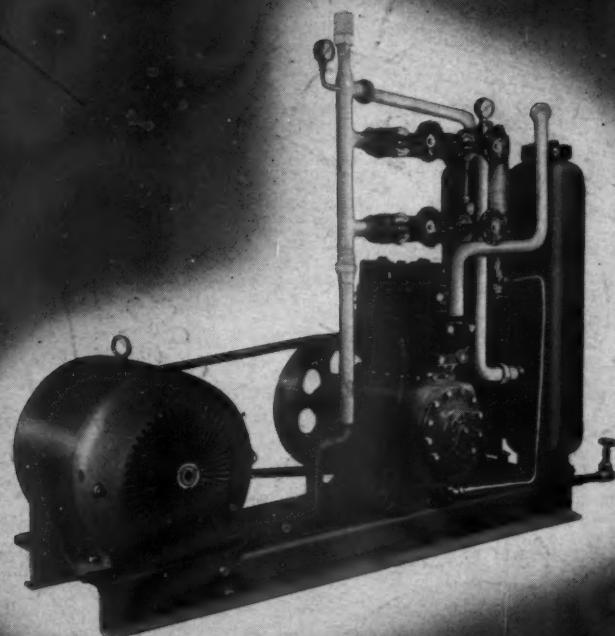


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Mr. Garfield writes "You will be pleased to know that since we have been using your LP-Gas meters, we have been completely satisfied with their performance in the field. They are light, durable, attractive and accurate.

"The use of a dependable LP-Gas meter promotes customer satisfaction. We have found that meters help solve our customers' routing problems.

"We have also found your organization to be very cooperative in handling our orders and in supplying us with technical and other information."

Mr. Garfield's reasons for recommending Rockwell LP-Gas meters are identical to those of other alert distributors who have found in them a way to conquer costs, streamline deliveries and boost sales. Why not adopt the profit-proved Rockwell meter plan for your own operations? Write for complete information.

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BUTANE-PROPANE

News

NBP

VOLUME 15 • NUMBER 10

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Executive

Jay Jenkins, President and Publisher
Paul Lady, General Manager
D. Newton, Advertising Manager
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Gilbert Bowman, Sales Promotion
Gene Masters, Research

Editorial

Lynn C. Denny, Executive Editor
Carl Abell, Editor
Roy A. Dempsey, Managing Editor
Lester L. Luxon, Technical Editor
Rowena Anderson, Products Editor
Raymond A. Grote, Art Editor

Publication Office

Los Angeles (57)—198 So. Alvarado St.
Phone DUnkirk 7-4337

Advertising Offices

New York (36)—11 W. 42nd St.
Peter Wile, District Mgr.
Phone CH 4-1969

Chicago (1)—333 N. Michigan Ave.
Wm. O. Dannhausen, District Mgr.
Phone FRanklin 2-4615

Cleveland (15)—1836 Euclid Ave.
Frank J. Enright, District Mgr.
Richard L. DeMuesy, Asst. District Mgr.
Phone Prospect 1-4584

Tulsa—P.O. Box 4055
Craig Espy, District Mgr.
2441 E. 25th Pl.—Phone 7-9807

Los Angeles (57)—198 S. Alvarado St.
Victor C. Howard
Phone DUnkirk 7-4337

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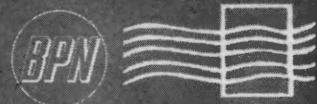
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LETTERS



Headquarters

for L.P. gas Information

Since 1931

Idaho

I am having a lot of loss due to temperature change. Is there a meter made to work on a bulk truck that will compensate for temperature changes in gas?

What can you suggest that would help me?

D.B.

We do not know of any liquid L.P. gas meters that are equipped with compensating devices which will correct for temperature.

It is possible that you can work out a plan for selling to your customers on a temperature-corrected basis. The Natural Gasoline Association of America has adopted correction factors for various temperatures and specific gravities of L.P. gas mixtures. These factors are included in Table No. 1 of Chapter 3, Part 2, page 51, of the "Handbook Butane-Propane Gases." You will note that the volume of LPG changes about 1.6% for each 10° variation in temperature. Therefore, if you buy on a 60° F. basis, your loss would be 1.6% if metered out at 50° F., 3.2% if metered out at 40° F., and 4.7% if metered out at 30° F. Normally, the liquid temperature does not become nearly as cold as the ambient or outside temperature. There is usually a considerable lag.

Another factor which may be affecting your loss is vapor return, or lack of vapor return. When you fill the truck at your supplier's plant, the vapor return hose is probably connected. When liquid is pumped into the truck, the vapor which is replaced by liquid is transferred to the supplier's tank. Then, if you do not use vapor return in making deliveries to your customers, the space vacated by liquid must be filled by vapor evaporated from the liquid. This can be a fairly large amount.

For instance, assume that a truck containing 1000 gals. of propane is unloaded by pump and meter without vapor return. The pressure in the truck is about 60 lbs., or five atmospheres. A thousand net gallons has a volume of 133 cu. ft. Remember that the gas or vapor in this space is under 60-lb. pressure, reduced to about one-fifth the volume it would occupy at atmospheric pressure and 60° F. Therefore, the volume of gas would be 133 by 5, or 665 std. cu. ft.

at atmospheric pressure. Since 1 gal. of liquid will make 36.45 cu. ft. of vapor, 665 cu. ft. of vapor represents about 18.2 gals., or 1.82%. If the pressure is higher, the loss is greater.

It is suggested that you use a vapor return hose when delivering fuel, if possible, or obtain credit for vapor returned to your supplier.—Ed.

Minnesota

We have a prospective customer who at the present time is heating a commercial garage by a stoker furnace situated in one corner of this building, which is 40 by 60. This furnace just gives off radiant heat, which circulates throughout the building. He is paying \$20 a ton for coal.

He is contemplating installing gas fired suspended heating units. However, he would like to know how much more he can expect his fuel to be when heating with propane at 14 cents per gallon. Can you help us with this problem?

E.O.K.

We do not know the heating value of the coal which your prospective customer is using, but, for the purpose of our problem, assume it to be 12,500 Btu per pound of coal. To compare the price of the two fuels it is necessary to reduce the costs to come common ground. The best way is to determine the cost per 1,000,000 Btu.

Then the comparative costs, based on fuel delivered to the heating device without regard for efficiency will be:

Coal	1,000,000 Btu
	2000 lb./ton × 12,500 Btu/lb.
	× \$20 = .80 per million Btu.
L. P. gas	1,000,000 Btu
	91,000 Btu/gal.
	× .14 = \$1.54 per million Btu

The picture is not complete without considering the efficiency with which the appliance consumes fuel. A stoker fired coal furnace will operate at an efficiency of 60 to 65%, while the gas fired unit heaters have efficiencies of 75 to 80%. This would

bring the price of coal heat up to \$.80 + 60% = \$1.33 per million Btu delivered to the room, and L.P. gas up to \$1.54 + 75% = \$2.05 per million Btu. There is considerable question about his fuel bill increasing in proportion to the above prices. It is doubtful if his present arrangement does a very uniform job in heating. It is probably too hot in the corners near the furnace and too cold in other parts.

The unit heaters, properly directed, will heat the entire room uniformly. It is likely they will do a better job with less heat units delivered to the appliances, but if the furnace was inadequate in the first place and could not deliver the heat required, it is possible that his fuel bill will increase more than the ratio shown above.

The cost of coal and ash handling, coal wasted in handling and as unburned in the ash, dirt and dust bother and damage, storage space lost in storing coal, labor, furnace repairs, labor waste because of improper heating, etc., should also be considered in evaluating the overall picture.—Ed.

Alabama

We are having quite a bit of trouble with our tank truck delivery meter. Each time we disassemble the meter, we find that it is completely clogged with a black grease-like looking substance. It feels gritty and has a cracking sound when you press it with your fingers.

If you can explain to us the reason for this it will be appreciated. Could it be caused from the sulphur content in our LPG mixture? We use a 130-lb. mix at 100° F.

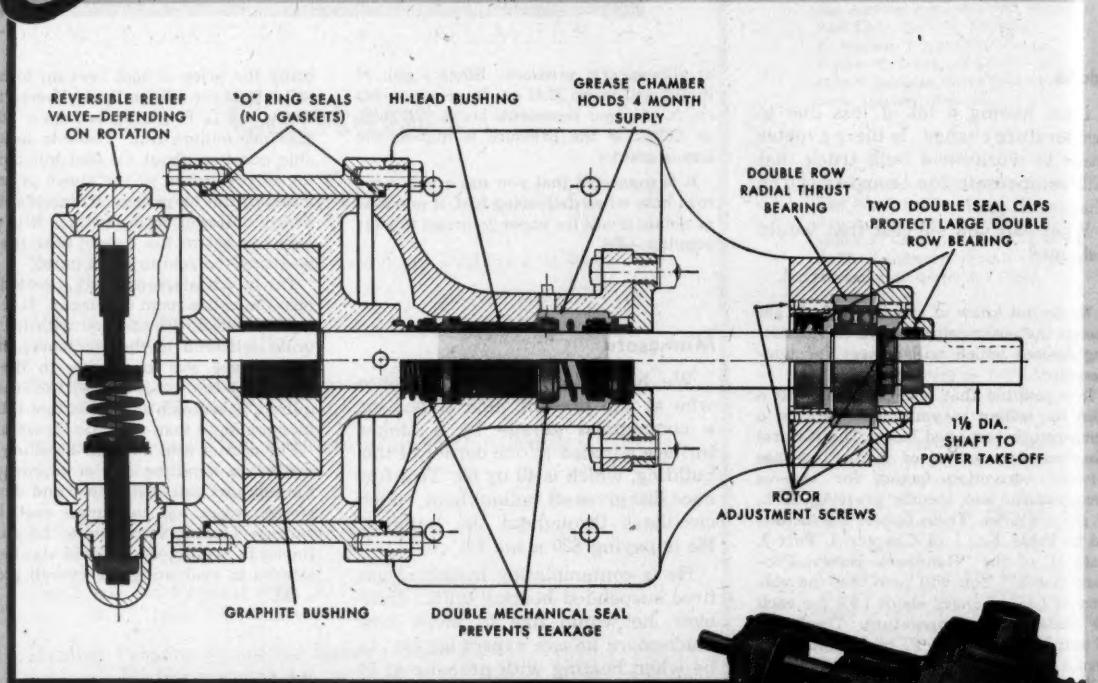
J.W.P.

There are many sources of dirt and other impurities in L.P. gas. It may enter or be left in the gas at the refinery or it may enter the fluid at points of fuel transfer or from transfer equipment such as pumps.

The impurities which you describe may be the result of chemically combined impurities formed during the refining process or not entirely removed during the purifying process. Sulfur may be a con-

Invader

"DUAL SEAL" PUMP FOR LP-GAS SERVICE

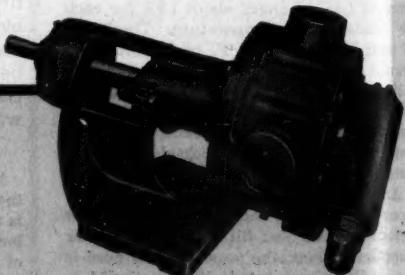


DOUBLE { MECHANICAL SEAL PROTECTION FOR BEARINGS

● Look closely at the diagram above. See the many advanced engineering features in this new Invader pump!

Thanks to the double mechanical seal, these pumps can't leak. The bearings are protected against water and dirt, assuring long, trouble-free operation.

Mounted on your trucks or installed in your bulk plant, Invader LP-Gas pumps will give you the kind of service you have always wanted!



HERE'S ANOTHER REASON why Invader pumps perform better... longer. Improved, rounded tooth design assures less "down" time, fewer replacements.

Invader

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tributing factor. Carbon in the form of graphite, Fuller's earth or other agents used at the refinery during the processing may be carried over with the L.P. gas. Sulfur compounds will often attack copper and brass to form a fine black scale similar to that which you describe.

We suggest, however, that you take this up with your supplier, providing him with a liberal sample of the substance so that he may have it analyzed and inspected to determine the probable source.—Ed.

Washington

We would like to make some repairs to our bulk propane storage tanks and would prefer to make them 100% safe before removing manhole plates and safety relief valves.

These tanks are in the 17,000-gal. class and we would like to have information on complete purging.

J.H.P.

There are several methods by which L.P. gas tanks can be purged and made safe before working on them. It will depend to some extent on the type of work to be performed which method will prove most satisfactory.

Filling them with water insures the displacement of all combustion gases, but interferes with most any type of work to be done. It even prevents satisfactory welding practice on the outside of the shell because of the quenching effect of the water.

Many shops steam the tanks for several hours before opening them or working on them. If the work is performed on the outside the steam flow is maintained while repairs are in progress.

Other shops, making repairs on inflammable fluid storage vessels, purge with an inert gas such as carbon dioxide, nitrogen or the exhaust fumes from an internal combustion engine. Whenever purging is performed in this manner a combustible gas analyzer should be used at all times while the purging is in progress and during the time the tank is open.

If it is necessary for personnel to enter the tank after purging, then a good-sized air blower should be connected to the tank and the purging fluid (water, steam or gas) replaced with air. Good air circulation through the tank should be maintained all the time it is open to quickly carry out any combustible gases which may be released from deposits on the walls of the tank. Steam purging may not eliminate this problem.

Any men working in the tank should have a safety line attached and be watched and attended by someone outside the tank. Welding directly on the tank should be done only by a certified welder. Also any direct welding on the shell invalidates the code stamp and requires re-testing and inspection in accordance with the code under which it was fabricated.

All the above methods of purging have been successfully employed by companies actively engaged in repairing inflammable fluid containers of all types up to and including 30,000-gal. L.P. gas vessels.—Ed.

Michigan

Can you help us? I have about 60 oxygen tanks that were purchased in 1946. These I have been using for propane gas. Now I have a chance to sell them and the purchaser wants to use them for air tanks, but wants to get the propane odor from them. Can you advise how we can do this?

C.M.M.

We are pleased to know that you are taking 60 oxygen tanks out of propane service and selling them for air tanks. If these are the small oval tanks, military surplus type, this is one of the best ideas you ever had. If you have any more on hand, we would suggest that you dispose of them also.

The propane odorant can generally be removed by rinsing in gasoline, and then steaming. It is generally more effective to do the steaming in an inverted position, with the opening down. It might take as long as an hour to completely remove the odorant, so we would suggest that you make up a simple manifold to steam several cylinders at a time.

The army surplus oxygen tanks are not suitable for propane service. They have never been approved by any authority for this use. The approved ICC cylinders, and the storage tanks made under the ASME or API-ASME codes for propane service are safe.—Ed.

Illinois

What are the regulations for distances for storage tank of bulk plant from a railroad? Are there any regulations regarding high voltage electric lines running across property where storage tank is located?

K.B.

Circular No. 17-B of the Association of American Railroads, Operations and Maintenance Department, Operating and Transportation Division, 59 E. Van Buren St., Chicago, Ill., deals with the subject of distances for storage tanks of bulk plants from railroads. There are several factors to be considered, and "a distance of 25 ft., and as much more as it is practicable possible to secure, is recommended."

We suggest you search your state and local codes regarding this matter. Some states and municipal L.P. gas codes require 50 ft. between the nearest rail of a main line track and any L.P. gas storage.

We do not have any regulation which we can quote in reference to high-voltage electric lines running across properties where L.P. gas storage tanks are located. Here again state and local codes may have references which cover it. Also electric power companies usually have easements where their power lines cross over private property and undoubtedly would have some jurisdiction in the matter.

Power lines are often damaged due to storms, ice, mechanical injury, etc., and fall. If they should fall and come in contact with an L.P. gas storage tank, it is conceivable that severe shorting and ar-

ing could burn a hole in the storage tank causing severe leakage and fire.

Another factor to consider is the strong magnetic field which usually surrounds high voltage electric power lines. This may set up a bad corrosion condition in the soil and attack any buried piping.

It would seem advisable, therefore, to keep L.P. gas storage vessels away from high voltage electric lines so that in case of damage to the power lines which might cause them to fall, no contact would be made with the storage vessels.—Ed.

Utah

I need to know if there is any publication that deals with the installation, cubic contents of ellipsoidal heads, piping and all pertinent facts of above- and belowground storage tanks. I would appreciate it if you folks could give me a bibliography of the above subject.

A.C.J.

Publications which will be helpful to you are listed below:

1. Handbook Butane-Propane Gases.
2. Recommended Good Practice for the Storage and Handling of Liquefied Petroleum Gases, published by the Factory Insurance Assn., Hartford, Conn.
3. NBFU Pamphlet 58 and 59, National Board of Fire Underwriters, Merchants Exchange Bldg., San Francisco.
4. Recommended Good Practice Rules for Liquefied Petroleum Gas Piping and Appliance Installations in Buildings, published by the Liquefied Petroleum Gas Assn., 11 So. La Salle St., Chicago 3, Ill.
5. Booklets No. 2 and 5 in the series entitled "Operating an LP-Gas Business."—Ed.

Ontario

Will you please advise if you have any information on an efficient and economical way of neutralizing odorant in 100-lb. cylinders.

Our experience has been that odorant appears to accumulate and build up strength on refilling operations, and in time becomes quite a service problem.

W.G.N.

Removing excess odorant from cylinders is always something of a nuisance. The two customary ways are:

1. To put approximately 1 qt. of LPG in the cylinder, slosh it around thoroughly, then release it to atmosphere with the cylinder upside down.
2. To steam the cylinder, also in the inverted position.

The odorant is contained in the oily residue at the bottom of the cylinder, and either of the above processes removes it satisfactorily. However, the odor will cling to the ground and will smell rather bad for several days after the operation.—Ed.

LP GAS

Modern, conveniently located plants . . . sound business integrity . . . top quality products, always "on spec" . . . and trained technical personnel to help with *your* problems . . . Be "SURE" — and specify an LP-Gas which is . . .

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OCTOBER

BPN

Editorial Comment

WE ARE PLEASED TO QUOTE the following from an address recently made by F. M. Banks, President and General Manager of the Southern California Gas Co., and Second Vice President of the AGA:

"When one of us in any way antagonizes a customer or member of the public, our action is remembered. Forgotten is the fact that for 365 days last year, that customer received a clean, cheap fuel, when he wanted it, where he wanted it, and in the desired quantity. These, the important things, are forgotten, while the minor things are remembered and resented.

"There are few things in this world more powerful than public opinion. With public opinion on your side, there is little that cannot be accomplished; without it, nothing can be done.

"It obviously behooves all of us, therefore, to get and keep public opinion on our side."

We think Mr. Banks was speaking for all industry.

IN LAST MONTH'S BUTANE-PROPANE NEWS (page 51) we pointed out the rapidly developing market for L. P. gas in the cooking of garbage for hog feed. We now learn that garbage cooking is required in 38 states, either by special law or by authorized regulations.

According to our latest report, such legislation is pending in Arkansas, South Carolina, and Massachusetts; California is working to establish a suitable regulation which will do what the legislature failed to do; Rhode Island now has a regulation prohibiting payment of indemnities to feeders of uncooked garbage who suffer losses of hogs due to diseases which could have been prevented by cooking. These include hoof-and-mouth disease, hog cholera, and V-E. This leaves only Delaware, New Jersey, New Mexico, and Vermont yet to start action, but it will come, and you should be working on the feeders at once.

Most of the credit for opening up this vast new potential market for L. P. gas should go to Farm Journal, a leading agricultural publication, which pointed out the need for the laws and regulations nationally, less than a year ago.

Ed.

DON'T SPECULATE ON LP-GAS FITTINGS

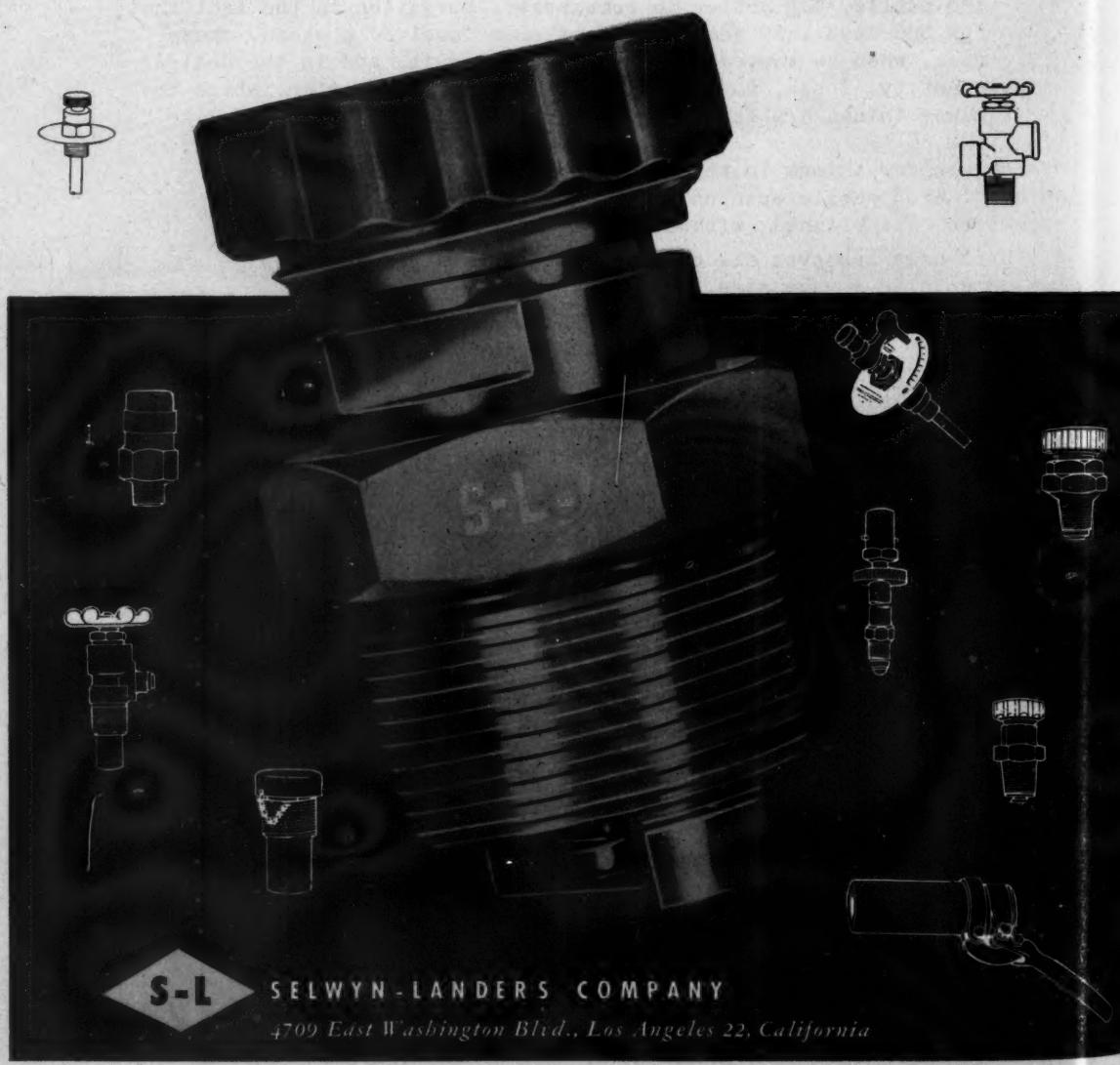
When you see the mark S-L on an LP-Gas valve or gauge you see a fitting expertly designed to do a specific job. You don't speculate on safety, dependability or quality when you buy Selwyn-Landers.

Our entire manufacturing facilities are devoted to the building of LP-Gas equipment. Consequently we give this business every ounce of effort, thought, research and development not only toward making a better product, but also a product that will cost you no more. Don't speculate on LP-Gas fittings—specify S-L on every LP-Gas container.

SELWYN - LANDERS

PRODUCTS

**ARE PROVED
IN USE**



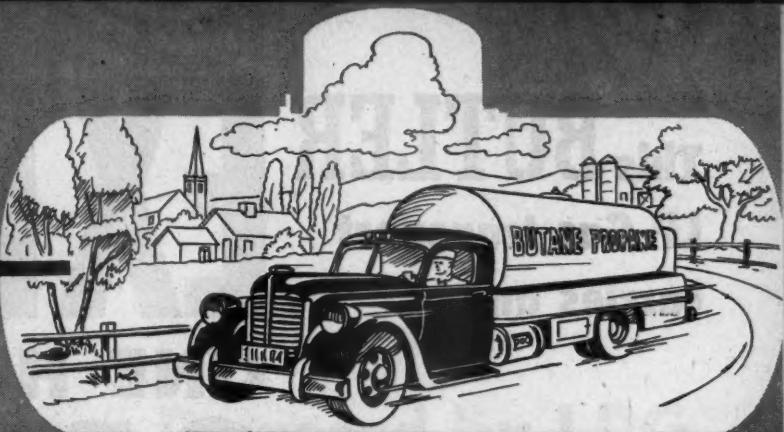
S-L

SELWYN - LANDERS COMPANY

4709 East Washington Blvd., Los Angeles 22, California

BEYOND

THE MAINS



America is still the land of unlimited opportunity and unfulfilled promise, and the distribution and utilization of L. P. gas is still in its pioneering stages. After a seven thousand mile drive through several of the states in which our industry has reached its highest development, this conclusion is unmistakable.

In 300 miles through the best farming districts of Illinois, we noted that a high percentage of the rural homes had no L. P. gas service whatever, and that consumer bulk tanks were comparatively rare. Less than 2% of the tractors working in the fields were equipped to burn propane, and the predominant heating fuels are still oil and coal. Considering that one converted tractor will provide summer balance for the winter load of two domestic central heating plants, this is "unfinished business" of tremendous magnitude.

In the Gulf Coast states, which are alternately punished with disastrous floods and searing drouths, thousands of acres of rich bottom lands still stood under flood water, while in the fields across the fences crops shriveled from lack of recent rain. Dust drifted a quarter of a mile from moving tillage implements, while everybody prayed for rain and nobody pumped water.

In these same states, thousands of negroes, ranging from grammar school children to octogenarians, chopped cotton and weeds on plantations. This is the land where flame cultivation originated, and where the flaming equipment has reached its highest development.

In the great wheat and corn belts, millions of bushels of grain will be lost this year because there is not enough drying equipment to provide protection against damage from harvest-time showers. This is a job that can be done better and cheaper with L. P. gas than with any other fuel.

This could go on and on. But let's stop the discussion before it sounds like scolding. Let's give full credit to the pioneers for the marvelous growth of the L. P. gas industry, but at

the same time we should recognize that we are still on the threshold of the development that is to come.

Big Return On Small Investment

In getting around the country we note an increasing trend toward the use of distinctive color schemes to identify the plants, properties, and rolling stock of L. P. gas distributing companies.

This is in line with the established practices of other industries supplying the daily needs of millions of customers. It is, in effect, a "trade mark", and it certainly creates an advertising asset of considerable value.

We can not help wondering why so few operators have carried this idea to its logical conclusion, and applied the color scheme to customer tanks as well as to their own properties. If it is worthwhile to create a merchandising identity for the product while it is in the hands of the distributor, it is equally important to carry that identity to the package in which the customer sees the product every day, and which people passing along the highways see with considerable frequency.

If we were the dominant operator in a territory, or if we had some kind of operating program assuring reasonable permanence of customers, like metered service through company-owned tanks, we would want to cash in on the billboard value of the customer installations. Why let it look like "another L. P. gas tank" when it might just as well be distinctly OUR gas tank?

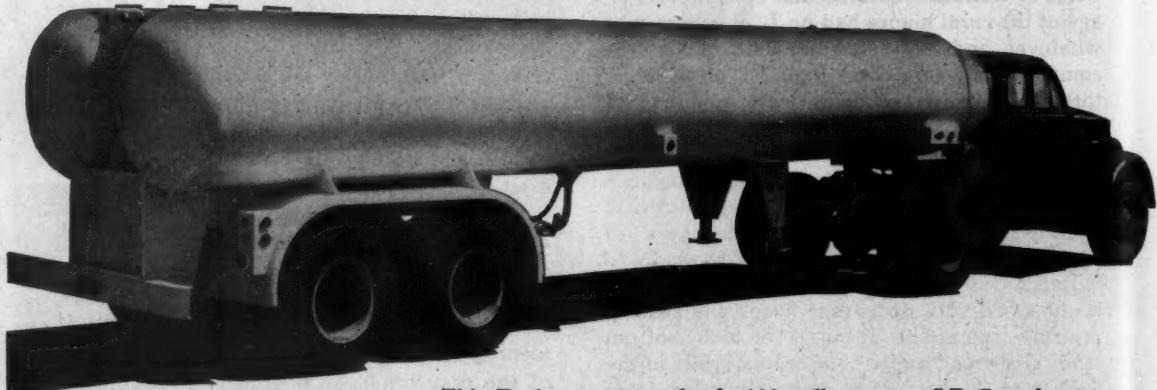
And if we had the problem of selecting a color scheme to individualize our operation, it would be one that would blend harmoniously with the typical surroundings of our customers' homes.

Carl Abel

This BUTLER
LP Gas transport
carries an ...

EXTRA ONE HUNDRED GALLONS

to give you an added
week's load every year!



Five Counties' Farmers Association, Clarksdale, Mississippi, is the owner of this transport which carries 100 extra gallons of payload.

This Butler transport hauls 100 gallons more LP Gas than most standard-design units operating within similar load limits. Butler engineers gained this extra payload with a streamlined design that eliminates non-essential parts and useless dead weight. There is no sacrifice of Butler strength and stamina. All vital equipment is retained.

Bigger payloads . . . lower costs . . . increased revenue—these are typical results when Butler engineers tackle your transport problems. You can profit from their experience the next time you're ready to put new transports on the road.

Get the complete story on how Butler LP Gas transportation equipment can help make your business more profitable. Write for full information, today!



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Union Pacific's X-57 propane-fired gas turbine locomotive, with vaporizer-equipped tender converted from tank car.

New "Iron Horse" Powered by LPG

• By Fred M. Burt

FOR the past three months the Union Pacific Railroad has been operating a propane-fired gas turbine locomotive in regular freight service between Los Angeles and Las Vegas, Nev. Developing 4800 hp and weighing 275½ tons, this locomotive has pulled a 79 car train weighing 4650 tons. Its fuel consumption at full output is 23 gals. per mile. The operating results of this locomotive to date have exceeded expectations, and it is expected that in the not too distant future similar tests will be conducted in passenger service.

This development may have considerable significance to the future of the L. P. gas industry. Fuel consumption on a railroad is almost constant from day to day. It provides a very large market for steady year-round production of fuel—something which has been urgently needed by the production end of the L. P. gas industry. One locomotive of this type will consume close to 3 million gals. of fuel per year. Seven hundred of the giants would offer a market equal to the present domestic consumption of LPG in the United States. Such a demand could make it worth while for refiners and producers to expand

their facilities to recover a much higher percentage of raw materials than is economically possible with the present off-balance seasonal consumption. Up to a certain point, this would be beneficial to the local marketers, but it is conceivable there could be a time when the available supply would be inadequate for both railroad and domestic use. That time will be years in the future, but the situation must be watched.

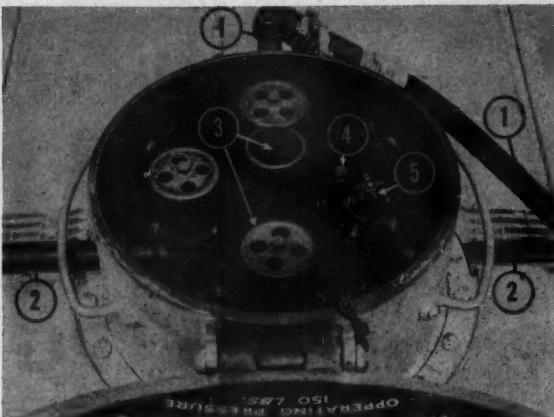
The cost of the Union Pacific propane locomotive is said to be \$530,000. Its power output is a little greater than that of the 3-unit diesel locomotives which are now in common use, the total cost of which is \$540,000. Six similar gas turbine locomotives, built to operate on residual fuel oil, are in parallel service, and more are on order. The decision to develop the propane-fired unit was made as the result of maintenance difficulties experienced with the oil-burning jobs, and the freedom from these troubles shown by similar turbines operating on natural gas in pipe-line pumping service. The most serious difficulties with the oil-fired turbines have centered around the chemical and physical erosion of the turbine blades due to impurities in solution or in suspension in the fuel, and to

deposits of combustion products.

Gas turbines of this same general type operating on natural gas, in which the major impurity is sulphur and the corrosion is light, have been giving an average blade life of approximately 3½ years, in 24 hour per day service. It is expected that with propane, which has higher purity, blade life of approximately six years may be reached in railroad service. With the simple construction of the turbine, there is little else to go



Loading propane through dome of tender from tank truck. Two-inch loading line at right, and one-inch vapor return line at right. Hoses are wrapped with static lines, and car is grounded.



Dome detail of tender: (1) Propane filling valve; (2) vapor return valve; (3) tank pressure relief valve; (4) thermometer well; (5) slip tube gauge.



Rear end of locomotive: (1) steam condensate return line; (2) steam line to vaporizer; (3) propane line to turbine; (4) compressed air line to fuel control valve; (5) air line for steam control; (6) steam heated insulated line preventing condensation of propane.

wrong, so it is believed that the maintenance cost of the turbines will show a great advantage over the more complicated diesel engines.

One of the major problems in setting up the Union Pacific test was the arrangement for and construction of the portable fuel tender. For this purpose, a standard propane tank car with net capacity of 11,300 gals. was leased, under terms which required its eventual return in the original condition. On account of this last stipulation, it was necessary to make all alterations in or through the existing dome, without cutting or welding the tank. For operating reasons it is necessary to supply vaporized fuel in quantities up to 120 million Btu/hr., at a pressure of 150 psi. To accomplish this, it was decided to build vaporizer coils in the tank, to be supplied with steam from a boiler deriving its heat from the combustion in the turbine.

Steam flow to provide vaporization and maintain pressure under the variable demand is controlled and regulated by the propane pressure, acting through a pressure pilot and pressure controller. There is also a safety shut-off to stop steam flow before the safety valve blows if the propane pressure rises above a set point due to failure of instruments or valves. It will also close if the pressure drops down to a break in the propane static line.

Flow of propane from the tank car dome may be shut off either by a manually operated plug valve at the dome outlet, or by an air pressure operated valve controlled from the

locomotive. Excess flow valves are installed in all propane lines to operate in case of a line break. A special safety valve with manual release is installed in the propane line to protect piping and housing from excess pressure due to thermal expansion. This same valve permits venting of vapor from the line before disconnecting the hose. The customary pressure relief valve on the tank protects against high internal pressure.

All lines in and out of the dome may be closed by block valves if a leak occurs in the heating sections or internal piping. A check valve prevents propane from backing up the steam line to the boiler. If propane enters the condensate line, it will escape to atmosphere through the flash tank vent on the locomotive. The final safety device is a steam shut-off valve of the "deadman" type which insures that the system will "fail safe" in the event of a wreck. Once tripped, this valve remains closed until it is reset manually, and if there is a break in the air line, the air operated block valve and the steam valve will both close, as air pressure is required to hold them open.

Precautions are taken that there will be no liquid present in the fuel vapor when it reaches the burners. A baffle is provided in the dome to prevent splashing of liquid into the outlet pipe. Any liquid entering the pipe is vaporized by auxiliary heat before it can reach the burners.

According to David S. Neuhart, Union Pacific's general superintendent of motive power and machin-

ery, operating efficiency and maintenance economy are the principle advantages expected from the use of propane. Operating costs under various conditions are yet to be determined, as they cannot be known until operation over a considerable period determines the maintenance cost. It is known that the propane-fired gas turbine locomotive is very flexible in handling trains, with exceptional ability to start and pull heavy trains. Lower maintenance costs, and less time out of service for overhauls are a definite advantage which seems certain on account of the clean combustion and lack of combustion deposits on the turbine blades.

In the test operation now being conducted between Los Angeles and Las Vegas, a distance of 334 miles, fuel is supplied at both ends of the line by tank truck. A complete propane fueling station, with storage to be supplied from railway tank cars, is nearing completion in the Los Angeles yards. Richfield Oil Corp. supplies the fuel, and their engineers have collaborated with those from General Electric, manufacturer of the turbine, and with the Fluor Corp. and Union Pacific, on the various problems involved in developing the fuel system.

Producers of L. P. gas are watching this test with extreme interest, as it seems to offer an important opportunity to stabilize and enlarge the market, and to conserve products now being wasted or returned to the ground due to the unbalanced market as presently developed.

Your Answers to 20 QUESTIONS

Can Spell Success or Failure

By H. Ferris White

Buz, Allen & Hamilton, Chicago

DO

- Carry balanced line of well chosen appliances.
- Develop a balanced summer-winter load.
- Establish gross margins that ensure profit.
- Develop your sales territory uniformly.
- Watch for new fuel applications to broaden your sales field.
- Promote your company through local advertising.
- Have a predetermined objective for a long period ahead.

DON'T

- Don't carry an appliance stock so large it will cripple you financially.
- Don't carry slow-moving items.
- Don't spread your sales territory beyond what you can service economically.
- Don't cut prices.
- Don't permit an easy-going attitude to afflict your organization.



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OCTOBER, 1953

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H. Ferris White

DURING the past 25 years* your industry has had a continuing record of colossal growth in the face of occasionally limited supply and shifting markets. The healthy demand to date has minimized to some extent the importance of efficient organization and resultant selling drive. Today with continually increasing storage facilities, new applications for L. P. gas, and the gains you are making against other fuels, the situation becomes more competitive with top rewards going to those who take time out to plan ahead and to strengthen their organizations to meet the new challenges.

The question is, how can relatively small organizations prepare for any alternatives which may lie ahead? The task of pushing forward regardless of peace moves, full-scale war, continued creeping mobilization, or changing tax burdens will depend upon the condition of your individual businesses when you are faced with a new economic picture.

Small companies can do many things to insure their position during the next few years. Now is the time to set your own personal targets, to appraise your strengths and weaknesses, and to start on a program of action that will lead toward your objectives. Since each of your businesses has individual characteristics, I cannot set any over-all objectives for you as individual operators, but

I am going to suggest 20 questions that can be used in reviewing your business and your organization. These questions, if honestly answered by you, should highlight weak points calling for attention.

The first 10 questions have to do primarily with the sales area of your business, while the last 10 cover customer service and management control. Although the answers to these questions will not always be the same, since the problems facing each one of you must be studied in the light of your own situation, I will try to give you my idea as to the application of these questions to your type of business.

1. Do you have a balanced line set to meet the requirements in your area?

By balanced line I refer not only to a line of appliances and equipment, but primarily a balanced demand summer and winter. What is being done in the summertime to build demand through new applications, thereby balancing your area's year-round consumption? Do you have a reasonable stock of appliances that can be sold in your area and will not put you in a position where competition will have to provide the ultimate service? In other words, if you sold all appliances on hand, would you be in a position to service at a reasonable cost?

Trying to meet every individual

*A paper delivered at the 1953 convention of the LPGA.



appliance inquiry that may arise will prove very costly. Anticipate, if possible, those appliances that will add healthy volume and year-round customers. Too large an appliance stock ties up a large percentage of your capital, and if some of these items move slowly, over-all sales effort is dissipated. Sales effectiveness on the slower moving products is lessened because salesmen know less about them.

Along this same line there is seldom a compelling reason for carrying directly competing products. If your policy is to distribute a broad line of appliances in support of your gas business, you should reach for a well-chosen, balanced group of products, keeping in mind that you still have the job of going out and selling this line. You should also endeavor to take full advantage of the manufacturer's immediate shipment and local warehousing facilities.

2. Does each item in your line stand on its own feet profit-wise?

The gross margin on every item you handle should be sufficient to warrant handling it. An average gross margin ample for a fair profit after operating expenses is a basic requirement, but each product should contribute independently to it. You should not limit your profits to gas sales alone.

Those items in your line showing strong profit margins and maximum gas consumption should receive the greatest sales emphasis. On the other hand, items which are hard to sell, although they carry large margins, are a waste of time because of the high selling expense attached, which may wash out any final net profit.

3. Is your sales territory too large for economical service—Small enough to get thorough coverage?

During easy sales periods many of us get overly ambitious regarding the territory we think we can cover. We may develop more customers than can be serviced properly or too large or inaccessible a geographic area to be covered with present equipment. It can prove to be very expensive fighting competition close to his home base and far from your own. Little time is available for thorough development of your natural area and the frequent customer contact that this requires.

Keep your territory small enough so that your ability to service becomes far better than anything competition might offer, still large enough to support your business and to provide expansion possibilities when you are ready for them. On the other hand, a too small territory will deaden sales initiative by offering too small a financial reward to meet your own objectives.

4. Are you equipped for competitive selling?

Certainly reasonable earning opportunities will still be present in L.P. gas distribution for a long time to come. This means that you can expect broader horizons and should be able to attract good men to go along with you. Top performance can be demanded as long as this earning potential continues.

You can and should gauge the power of your own selling effort by a close appraisal of current results, especially under competitive pressure. You should review your understanding of your own products, your customers and their businesses. This appraisal should not be merely a self-appraisal, but should also be applied to all those working with you. In today's market, unless we should have full mobilization, no organization need try to get along with an undermanned force, poor sales performance, or compromise with high standards.

5. Are you and your men developing the territory or only chasing hot leads?

If your sales effort is pointed towards high-spotting, you are not getting the kind of solid sales performance that will give you an easy payoff in the long run. A substantial new prospect in the area certainly should be followed closely to offset competition, but this effort must be supported by planned continuing coverage of the entire territory.

Territorial development work must be aimed at uncovering all possible and potential customers, selling them on your company, your products and your services. It means working hard at holding your regular customers and bringing old customers back. This approach should build solid customer acceptance and provide assurance of repeat business.

6. Are you getting a fair share of the business in your area as measured against competition?

To satisfy yourself on whether or not you are getting your proper share of sales in your local area, you must know the area potential—by customer and by potential customer classification. With these facts you should be in a position to evaluate your own performance. Your sales volume trend and the sales trends of your competitors are more important than a snapshot of today's performance. Competitive strength should be measured in terms of volume, price policy, caliber of selling activity, company reputation, and service ability.

A true picture of your own potential is also necessary to enable you to do a good job of setting targets, general policies, budgets, and other factors in the general management field. If you have no strong competition within your primary area, it would be well to find out how some

ARE YOU EQUIPPED FOR

**Competitive
SELLING**

of your competitors are doing in adjoining areas where the problems are much the same.

7. Are you price cutting on special deals to get new outlets?

Price cutting may bring in some new customers and may make it possible to steal customers from competition, but it also reduces your profits materially. Customers sold through such means are open to competition coming in on the same basis, and the end result is that you all suffer.

Customers signed up originally through strong personal selling of quality and service at fair prices must provide the basic volume the business needs, and this is the type of relationship that is hardest to break up.

The super trade-in can be just as harmful as price cutting and has the same basic weakness. Your customer gets the idea that his suppliers will do anything for a sale, and it is almost impossible to get him back on a reasonable basis.

8. Are you and your men keeping up to date on sales techniques and expanding applications?

A major hurdle to overcome is the easy-going sales attitude that most of us have assumed over the past several years. It is management's responsibility to re-educate themselves, as well as their men, to meet competitive pressure of electricity and other fuels effectively. Obviously, a manager must be thoroughly instilled with competitive drive himself before he can pass it on to his men or do a top job with his customers.

Technological advances that permit new applications of L. P. gas should

be followed closely by you. Some of these will certainly furnish additional sales opportunities in your own area. Since your service men are the most frequent contact you have with your customers, they too should be kept fully informed on these new applications.

Important help in the form of sales forecasts, territorial quotas, and route planning and scheduling should be considered as regular tools of your sales activity. Strong competitive sales techniques, both in your industry and in other industries within your local area, should be analyzed and discussed with your men.

9. Do you have a planned promotional program effective in promoting the company, its products and services?

Many small organizations are enthused from time to time about promotional activity, and it is certainly not enough to merely "ride the coattails" of suppliers in the advertising of their products. You are trying to build a personal relationship with the customers in your area, and in so doing there should be a planned, periodic promotional program, placing emphasis on your ability to do the best job possible in your community.

The buyers of your products are purchasing on-the-spot service, and they must be sold on your ability to provide such service. They must be sold on your company in its own right, as well as on the reputation of the products in your line.

The most constructive use of advertising is through a program aimed directly at the end users of your products. Based on a carefully compiled mailing list, consideration should be given to balanced use of direct mail, pamphlets, local newspapers, and, of course, classified ads in the local telephone book.

10. Are you equipped to move with changing local business conditions?

Sharp shifts in local, regional, and national business activity should be carefully watched in laying future sales plans. Although your local household business may remain the



same in a business recession, your plans for expansion may have to be curtailed sharply in order to keep your business in proper balance. It is always helpful to have a good feel of what is ahead so that you can shift your sales emphasis as desired.

From your own experience you should have a fairly clear idea of the impact on your business of full-scale war, changeover to peace, and national depression. The record of your industry over the past 20 years has been one of expansion, with new fields now rapidly opening up. Your long-range expansion may depend on your ability to quickly take advantage of new opportunities created by shifting conditions. Moving ahead towards a predetermined objective based on an estimate of what is to come makes each promotional investment pay off far better than when you scatter your shot over the market hoping to hit a soft spot somewhere.

In these first 10 questions I have concentrated on those points that have to do primarily with customer contact. Appraising your own organization on each of these points and then doing something about it is bound to be helpful. Such an appraisal should take place regularly. It can be constructive only if done sincerely and with enough care so that you will end up with a list of strong points and weak points, giving you a full understanding of the base on which you can continue to build.

In the next 10 questions I cover management controls and customer service, without which any amount of sales effort will bring small reward. Sales of L. P. gas, equipment, and appliances are subject to all the basic risks of business. There is a natural tendency for individuals to curtail or postpone substantial purchases in times of uncertainty. Do





ing a complete job saleswise and servicewise is the best way to minimize risks.

In a tighter, more competitive market a good sales job may have to be evaluated by a considerably shorter measuring stick. If this is the case—if your sales are likely to be curtailed or a stringent buying policy adopted by your customers—all elements of your business should be in such shape that they can be quickly trimmed down to fit. Any serious lag may prove to be disastrous. To prevent costly delays, you should know all the facts of your operations on time and be ready to act on the indicated trends.

11. Is your service activity being used as an additional sales tool?

Full recognition of the vital part which service plays in building sales should have its effect on your organization and operations. Your servicemen or you, if you are an individual operator, have the primary frequent contact with your customers. You should have a clear picture of all appliances in the homes you are servicing, the age and condition of each.

In making sure that your man who is responsible for regular deliveries is also sales minded and properly indoctrinated with a knowledge of all possible applications, you not only are strengthening your own sales effectiveness but are also broadening the ability of your man for the future. Frequently this man's relationship with your customer is your strongest fence against competition. If you do hold this man responsible for some of the sales load, be sure to keep an accurate record of results achieved by him so that he will receive proper recognition.

12. Are you properly avoiding emergency field service?

The average customer buying L. P. gas appliances is going to ask for as much free or costly emergency service as he can get away with. The first defense against emergency calls is proper installation to start with. Secondly, an occasional check should be made by your man servicing the customer.

Every sound distributor has to stand back of the product he sells, but when he is asked repeatedly to make emergency calls at all hours because of customer ignorance or customer carelessness, the distributor should temper his desire to be of service with a strong dose of common sense.

Legitimate emergency calls can frequently be turned into worthwhile selling time. Your men should keep this in mind and make every call pay off either in building good will or making direct sales.

13. Are you realizing the full profit potential of your appliance business?

Sound inventory control is one of the primary requirements of a profitable appliance business. Basically, your inventory objective should be to keep turnover high and appliance inventory at the lowest possible point consistent with sales requirements. Slow-moving items that may become obsolete on your floor can easily knock out any profits that you may make on the balance of your sales. This means you should establish maximum-minimum figures on each item based on usage in your area and speed of replacement. If you run into some obsolete stock, sell it out now and don't hope for some unlikely demand later on.

Going over your inventory from time to time is a good educational job for any of your men, for it keeps them up to date on what must be moved promptly and what new items you may have acquired.

14. Is your investment kept at a minimum but large enough for good customer service?

In your business of supplying L. P. gas and attendant units for gas consumption, you have an interesting problem of keeping your gas stock, delivery equipment, and appliance

supply in balance. Frequently when gas demand in your area moves a little beyond your ability to service, there is the temptation to immediately add additional delivery equipment, although that equipment may be used at rare intervals during the first year or so.

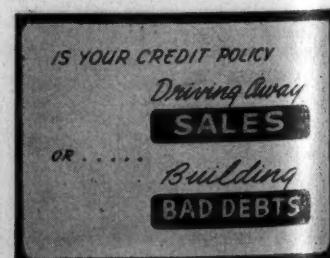
The successful, conservative operator will do everything possible to build up a demand first to really justify additional equipment, and he will hold off the purchase of new equipment until the demand is apparent. As far as appliance stocks go, there is no sense in overloading because of special opportunities offered by some manufacturers if you can't see any short-term market for the units involved. As a rule, the money is much more important to you in the operating of your day-to-day business than the small savings you may realize by heavy buying.

Keeping as much of the gas inventory in your area in your customers' tanks is once again a vital thing in holding your inventory investment down and staying in a flexible position.

15. Can you do business efficiently with your present equipment and facilities?

Many distributors seem to feel that any investment in facilities should be kept at an absolute minimum. Here again a proper balance should be used. Facilities should serve as evidence of efficient management, and the morale of your organization or of an individual operator will be affected by the appearance and utility of your over-all layout.

The location of your primary distribution point controls the required investment to some extent. Balancing costs against the desirability of a location should be carefully thought



out and, of course, will have an effect on the type of service you can give at the lowest possible cost. The appearance of your equipment is also a vital sales tool and probably has more advertising potential than any media, as your equipment is seen by hundreds of people every day, and they can't help but react favorably to neat, efficient units.

16. Is your credit policy driving away sales—or building bad debts?

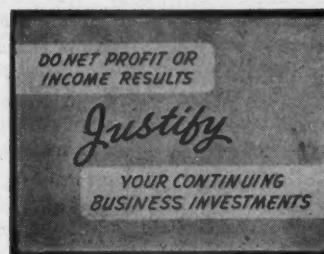
Assurance of minimum credit losses under pressure for maintaining and increasing sales volume calls for a realistic approach to your credit policy. A sound foundation for granting credit is a careful investigation of each customer and potential customer through banks, other community contacts, personal reputation, and competition.

A "personalized" rating measured on a sound credit scale ranging from full credit to a straight c.o.d. should then be established and periodically checked and altered as required. Errors in judgment should be rectified in the course of a closely watched collection procedure. With credit policies specifically and firmly established, you are in a position to reach for business on the right basis with confidence.

17. Do your operating figures tell you what you need to know to run your business?

Basic records that show where your business is today and where it has been and controls which provide guidance over where it is going are essential for stabilized operation. The rapid growth of many distributor organizations has added business complexities which cannot be handled on a hit-or-miss basis. You should be able to judge accurately and on a monthly basis how you are making out profitwise by product. This calls for well-designed financial and operating statements incorporating the results of accurate inventory control. Timely review of these statements, with the current detailed figures on sales, expenses, and financial position laid against past results, should offer the means of gauging

performance and controlling operating costs.



18. Do net profit or income results justify your continuing business investments?

Setting an earnings goal either in terms of income to the owner or net profits should provide a short-range objective towards which all controls can point. As your investment in facilities, inventories, and working capital increases or decreases, your target should be adjusted in order to justify fluctuating capital investment.

Having set a profit target, the required sales volume should be determined and will serve as a basis for the sales program and for controlling fixed and variable costs.

19. Do you take time to plan ahead?

Planning is the management tool which can translate the indicated trends and needs of the business into a well-balanced program of action for selling and promotion. In common with other executives, L. P. gas distributors have the problem of balancing planning time against operating time. Under the pressure of day-to-day responsibility or in the face of a sales crisis, the tendency is to regard the planning phase of management as postponable.

To do a good job of planning requires allocation of the time necessary for it. This means a deliberate separation of important from unimportant matters.

20. Have you provided for perpetuation of your business organization?

Characteristic of the L. P. gas in-

dustry is the relative youth of the majority of companies. Most of them are still managed by their founders, but some of these owner-managers are now reaching the point of retirement.

To insure continuation of the business and protection for your investment, you should make adequate advance provisions for passing it on to other hands and for coping with the inheritance tax problems. In many instances, this calls for planning moves which may result in ownership changes during the lifetime of the founder.

Building a future organization should be part of your long-range program. Start delegating management responsibility and authority to others while you are still around to counsel and advise. If you have no replacements available for you as top man, it is a reflection on your executive ability, not on the men working for you.

Conclusion

I have endeavored to present and comment on 20 questions to which the management of many companies are frequently trying to find the answers. Four main points can be used as a guide for self-appraisal.

1. Set your own personal business objectives.
2. Decide where you are now and what has to be done to achieve these objectives.
3. Organize your own time and the time of your men to meet this requirement.
4. Set up a series of steps moving from your present position towards your own objectives.

The things that make your business different from that of the man sitting next to you must be taken into consideration in developing specific plans and programs. That's why no one can successfully install "package" programs. Each situation must be considered on an individual basis.

In conclusion, I'd like to recommend that each of you take some time off very shortly and go fishing. I suggest this for I know of no atmosphere more conducive to good, solid, objective thinking. Take these 20 questions with you, try to create others of your own, and really take time out for self-appraisal. I'm sure you will find it a rewarding experience.

A New LPG Star Is Born



Five key points in the new star: (seated) Hermann Paris, president; (standing, left to right) Fred A. Rives, vice president; B. T. Nightingale, secretary-treasurer; W. B. Wight, vice president; Claude G. Haugabook, vice president.

Five independent LPG dealers merge to form one of the largest LPG dealer operations in the United States. The story of this merger — the thinking which preceded it — the problems of personnel and management — the planning and development of sales and organizational operations — are but a few of the many subjects covered in this new series of articles which start this month.

By Alex W. Bealer, III

THE old story is well known—about the father on his deathbed who called in his four sons to give them his blessing. He had asked the eldest to bring him five sticks, and when the sons had gathered them, the old man instructed one of them to try to break one of the sticks. This was easily done; the young man broke it like a match stem. Next the father instructed the boy to bind the remaining four sticks together and try to break them. Each of the stalwart sons tried in turn, but none could break the four sticks bound together. The moral, of course, was that the four sons could challenge the world if they would stick together.

This is exactly the theory used by the Consolidated Gas Co., Georgia's only statewide L. P. gas dealer, when the company was formed in August, 1952. It has been a little over a year since the five independent Georgia dealers who formed the company got together. The five previous owners are now officers, and the results have been as successful as the old Arabian could have told them. Combined sales are greater, combined profits can be used to greater advantage, and combined problems are more than offset by the aggregate of brains and experience that can now be called upon to solve them. In short, the consolidation has proved successful, not only as a more profitable undertaking for

the five original owners, but also as a means of strengthening the whole LPG industry in Georgia.

All has not been a bed of roses, however. Pioneering seldom is. In a consolidation such as will be described in this article, the time, the place and the people must be right.

Certainly the proper time and place were furnished by the state of Georgia. Unbeknown to many, Georgia is the largest state east of the Mississippi, and of great importance to the LPG industry because more than half of Georgia's population live on farms and in rural communities. For the last 10 years, Georgia farmers have turned more and more to mechanization and diversified farming, with a resultant jump in income that would have amazed Grandpa on his wornout cotton farm. As income has increased, so has the standard of living in farm homes improved. Georgia farmers nowadays enjoy modern living as much as city folk, and L. P. gas has shown the farmer that it can be depended on for modern living no matter how far in the backwoods he may live. LPG sales have grown tremendously in Georgia since World War II, and with a huge potential market still available, the signs point to an even larger growth in the years to come.

Time and place, though, are purely circumstances. People are required to realize the opportunities and take advantage of them. Georgia has been extremely fortunate because of the caliber of the people found in its well established L. P. gas industry.

At present there are more than a hundred independent LPG retailers in the state, some large and some small, but all getting along very well. During the war it was impressed on many of these dealers that competition was necessary, but cooperation was also essential at times. Accordingly, Georgia LPG dealers learned to ask small favors of one another during those years of shortages and transportation problems, and found that exchanging ideas was just as important to the future as exchanging favors during the emergency.

Among those companies who learned these industrial facts of life were the five independent dealers who later were to form the Consolidated Gas Co. These five were in a fine position to cooperate, because while the five together covered al-

most the whole state, there was no competition between any of them except along fringe areas.

Of more value to the future was the fact that while each of these companies was trying to sell as much L. P. gas as possible for any use that came along, each was particularly strong at one special phase of marketing in which the others were weak.

For instance, take the Consumers Gas Co. of Albany, Ga., operated by W. B. Wight. Albany is located in the southern part of the state, and because of rich farming and large military expenditures in the vicinity, has grown steadily, forming an important suburban and commercial market. Consumers Gas Co. had two branch offices which served home and industry in the towns and many farms in the surrounding countryside. Because of the nature of the territory he served, Mr. Wight had done a great job with cylinder sales, and could apply his special knowledge of selling cylinders to commercial, agricultural and home markets.

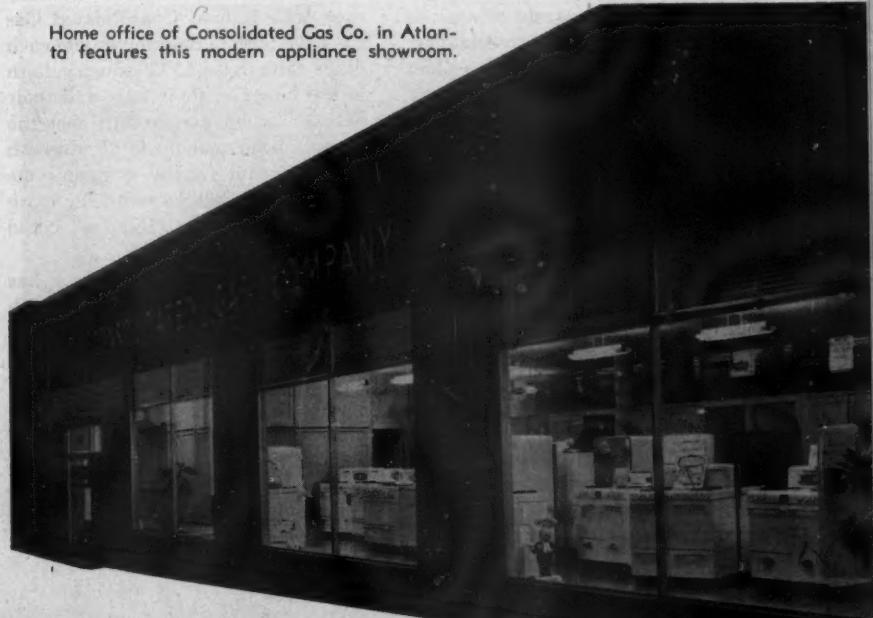
Bounding Consumer Gas Co.'s territory on the north was the Economy Gas Co. of Montezuma, operated by C. G. Haugabook. Around Montezuma is a rich, rolling countryside of large farms and small towns. There are few factories in the area, for here agriculture is practically the only industry. Mr. Haugabook early discovered that, with many farms in his territory operating from five to ten tractors for many hours a day during the season, he had a huge potential market for L. P. gas tractor fuel. At

the time of consolidation, Mr. Haugabook was servicing more tractor customers than any other dealer in the state, so was extremely well qualified to advise on how to develop and maintain a market for LPG tractor fuel in any section of the state.

One of the largest and most efficiently operated dealers in Georgia shared the territory to the west of the Economy Gas Co. This was the Automatic Gas Co. of Columbus, Ga., an industrial city of long standing, located just across the Chattahoochee river from Alabama. Its able president was Fred A. Rives, who had steadily expanded his territory over a 12 year period until he had branch offices in four other Georgia towns, selling to a mixed home, industrial and farm market. Unlike the other future members of the Consolidated Gas Co., though, the Automatic Gas Co. owned Gas Distributors, Inc., of which Fred Rives was also president. This company handled distribution for most of the appliances and equipment sold by Automatic Gas Co. Consequently, when Consolidated Gas Co. was formed it had at hand an expert on wise purchasing, which, after all, is the first step in successful selling.

Covering large parts of the northern and central sections of the state was the Georgia Automatic Gas Co., Georgia's oldest and largest LPG dealer. This company was headed by Hermann Paris, well known throughout the industry, who had built his company from 100 customers in 1939 to 7500 customers in 1952. Georgia

Home office of Consolidated Gas Co. in Atlanta features this modern appliance showroom.



Automatic Gas Co. included three of the largest cities in Georgia in its territory, and also served a large farm market in central Georgia.

The remaining members of the Consolidated Gas Co. were the Suburban Gas Co. of Savannah and the Ideal Gas Co. of Brunswick, Ga., both under the direction of B. T. Nightingale. They served the 75 mile coastline of Georgia, which covered the growing industry in the Savannah region and the lucrative resort business stemming from Sea Island and St. Simon's Island outside Brunswick. While an important part of their sales effort was aimed at the industrial and commercial business of the section, these two companies primarily served a home trade.

Assets of Consolidation

These were the companies, then, that were later to bind themselves together into the Consolidated Gas Co., one of the largest retail dealers of LPG in the nation. One may wonder why five sizable and successful independent dealers should wish to join themselves together into a larger company, facing the problems of sales coordination, advertising, taxes, employe relations, purchasing, warehousing, transportation, storage, organization and others that make the operation of a large company far more complex than that of a small company. What could be gained that would assure greater success under consolidation?

The first asset gained by consolidation is obvious. The consolidated companies had far more strength than any of the separate companies has possessed. Before consolidation, the largest of the five companies had 7 bulk storage plants with a capacity of 100,000 gallons. Now each of the previously independent dealers can share 27 bulk plants scattered all over the state which can store more than a million gallons. This means, of course, that when cold weather hits North Georgia, any sudden demand for gas can be met by drawing on bulk storage in the southern counties, where winter comes later and is generally much milder.

The same thesis can be applied to transportation and warehousing. Now Consolidated Gas Co. operates 50 tank trucks throughout their territory, a fact that insures emergency delivery in a few hours to any of the

offices which may need it. The combined warehouse space of the company now totals 100,000 sq. ft. This means that offices no longer need to rent extra space, sometimes at an exorbitant price, when their own warehouses are overtaxed. It also means that no office need pay rent for space that is empty for a time. There is always some branch than can use available warehouse space to good advantage.

Larger opportunities in the consolidated company do much to strengthen employe relations, and to draw better recruits. Larger service facilities which can be concentrated at any point strengthen customer relations. And of great importance, a much larger number of customers, spread over 104 of the 159 counties in Georgia, provide a comfortable cushion which can be shared by each of the twenty-five branch offices in case of sudden and unavoidable set-back in sales.

Strength of a Team

Probably the greatest strength gained was the formation of a team. Consolidated's management is a team that is equipped to use the valuable physical assets of their company and more easily solve the problems which continually appear. The team can do this successfully simply because five heads packed with experience are better than one, in running a company or playing a basketball game.

But, enough of strength. The ingredient in the new company which did more than all others to guarantee success was faith. The five businessmen who formed Consolidated Gas Co. have faith in themselves and each other, faith in the LPG industry, faith in the future of their state and their nation. Indeed, simple faith was the fountainhead that made all strength possible. And as the company developed, faith has provided far more success than mere "Bigness" could ever have accomplished.

In fact, the larger company has spawned problems that only faith and hard work could solve. Problems have grown like weeds in a corn patch, but plenty of capable field hands, from Hermann Paris, the president, on down, have diligently hoed them out, one by one, until problems are no longer a major issue. The people in Consolidated now think only of solutions, and the problems

take care of themselves. How the problems of a big company, which are only the problems of a small company magnified five times, are handled will be described in future issues of "Butane-Propane News." In the meantime, what of the persistent questions raised by smaller dealers in Georgia? How will the size and strength of a company like Consolidated affect them?

Hermann Paris can answer this one. He feels that his company will help the LPG industry in Georgia a great deal, and will not hurt other dealers in the slightest.

Mr. Paris backs his position by pointing to the market he and competitive LPG dealers serve. Approximately 96,000 rural families in Consolidated's territory are still using oil, wood and coal for cooking, about 45,000 farm tractors, a growing poultry industry, a well established tobacco growing industry, a growing home building program in suburbs and small towns beyond the mains, and a steady stream of factories moving into Georgia certainly can furnish enough business for large and small dealers alike, he feels.

Prestige for Industry

In fact, he and the other officers of Consolidated are quite sure that their company, with its size and facilities, can do much to stabilize the industry.

For the greater promotion of LPG as the modern fuel, through Consolidated's sales force and advertising, the demonstration of a uniform service over practically the entire state, and the realization by potential users that L. P. gas must be good or it would not support such a large company, are all building a priceless prestige for the industry that is bound to benefit every dealer in the state.

Since LPG sales in Georgia over the past year broke all records, it looks like the officers of Consolidated are right.

(Succeeding articles will cover the training and organization of personnel, the planning and operation of sales and advertising programs, operation of the service department, and the problems and responsibilities of management. Watch for these informative articles in coming issues.—ED.)

South of the Border . . .

LPG Sales are E-x-p-a-n-d-i-n-g



Robert N. Jones

THERE are forty or more butane dealers in Mexico City alone. This will probably come as a surprise to most readers, as it certainly was news to the author. During a recent four-week business trip the writer called on a number of LPG dealers throughout Mexico.

Mexico City has no natural gas. The most commonly used fuels for cooking are kerosene and charcoal, with electricity and LPG competing for the market in the silk-stockings sections. Fourteen years ago the butane business was launched when one man rigged up steam boilers to store butane, and another started giving away cylinders in order to sell kitchen ranges.

Today L. P. gas is to be found in twenty percent of the kitchens in the capital city. One of the large butane dealers has eleven thousand bottle-gas customers, plus a number of hotels, restaurants and industrial users. He sells 14 tank cars of LPG per month. His largest contract involves L. P. gas for two huge government housing projects, with a total of 2064 apartments. These projects, known as "Edificios Multi-Familiares," have most of the butane tanks on the roofs, four to twelve floors up. Tank sizes range from 500-gal. to 2500-gal. capacity, and butane is

pumped up through pipes from delivery trucks.

LPG is used for cooking and heating water. Incidentally, there is no summer-winter ratio to worry about in Mexico City. The climate is so mild that homes are not heated in the winter.

The development of the motor fuel and industrial markets for LPG has not seriously gotten started yet, due

to the relatively high price and the short supply of gas. Various sources estimated that from 60 to 70 percent of the gas consumed in Mexico City is imported from the United States. Petroleos Mexicanos is scheduled to install refining facilities to increase propane production in the near future.

American interests are reportedly studying plans to set up LPG storage



Painting cylinders at one of the larger LPG plants in Mexico City. Bottles are 20 and 30 kilogram sizes.

facilities near the port of Tuzpan, Veracruz. Deliveries will be made there in LPG tankers, thence via truck or rail to Mexico City. In view of the fact that it often takes twenty days for a tank car of butane to travel from the gasoline plant in Texas to Mexico City, the need for increased facilities can be appreciated. The cost of this transporting, the delays and uncertainties involved, place a premium on the price of LPG.

Alongside the six or eight big butane companies in Mexico City, there are a number of small companies which have an appliance store, a telephone, a pick-up truck and a few dozen bottles. They may have a bulk storage tank of their own, or they may take their bottles to some bulk plant to be filled and, in effect, operate as a delivery service. These small dealers have no contract with Pemex, and no tank cars to bring in gas from the States.

70 Cents Per Kilogram

In Mexico City, the government has fixed a price of 70 centavos per kilogram (about 17 cents per gallon) on bottle gas, delivered. This is almost exactly the price of "Mexolina" (40 centavos per liter), the low-grade gasoline. The 80-octane "Super-Mexolina" is 50 centavos per liter. In any case, the saving with butane is so small that practically the only trucks burning L. P. gas are those belonging to the butane dealers.

Most farm tractors are run on "Tractolina" (kerosene), which Pemex sells at the very low figure of 10 centavos per liter. It is only in areas immediately bordering Texas that many tractors have been converted. Besides the cheap kerosene, the tractor conversion business is faced with the double obstacle of expensive bottle gas service instead of bulk tanks on the farms, and expensive imported tractor tanks and conversion units.

Despite these obstacles, L. P. gas is coming into use on farm tractors, irrigation engines, even as far down as the cotton-growing region around Torreon, Coahuila, in the fertile valley called "The Lagoon." This progress is due in large part to the efforts of Mr. Mario Lozano who has a thriving gas business in Torreon as well as in four other towns.

He trucks his own gas from plants in Texas, using two 4000-gallon and one 5350-gallon trailer-trucks. For

bulk deliveries he has a 1200-gallon truck, and for bottle deliveries in the various towns he has seven pick-up trucks. All of his equipment, even his personal car, operates on butane.

Land of Contrasts

Gas dealers in Chihuahua and Tampico and Monterrey have the same type equipment and business as "Gas Lozano." In Chihuahua, three butane dealers compete for a thriving trade. Monterrey, however, has natural gas, and LPG sales are mostly beyond the gas mains. Here in northern Mexico the winters get cold, and you find space heaters for sale in the stores. A decided jump in gas sales is noted during the three cold months.

the case of Nieto y Compania, a first class chain of hardware stores which imports Swiss watches, American TV sets, English bicycles, etc. They started handling butane so that they could sell their gas ranges.

American-made kitchen ranges are sold widely in Mexico, although there are factories in Mexico City and Monterrey which put out fine ranges at much lower prices. Hot plates and small stoves are almost exclusively of Mexican manufacture. The writer visited a modern stove factory in Monterrey.

Other quality products made in Mexico for the LPG industry are regulators, valves, and cylinders. A factory in San Luis Potosi puts out an excellent line of LPG cylinders.



"Gas Butano"—typical small appliance store. This one is located at Aguacalientes, Mexico.

Mexico is a land of contrasts—hot and cold. Desert and mountain and jungle and paradise. Ancient and modern. When the writer saw a man coming to town in a wagon, with four or five empty butane bottles to be filled, it struck him as quite picturesque that mules should be used to haul butane. But such contrasts are commonplace down there. Butane is, in fact, used for gas lights in many homes in rural Mexico.

In Mexico, as elsewhere, the butane dealer is also in the stove and appliance business. More accurately, the hardware and appliance stores have gotten into the butane business. Take

There are several shops in Mexico City fabricating cheap bottles out of 10-gauge plate, that have taken over the trade in the metropolitan area. The industry there is standardized on 20-kilogram and 30-kilogram bottle sizes (44 lbs. and 66 lbs.). In many northern towns the 45-kilogram (100 lbs.) bottle is most common.

Almost all bulk storage tanks are imported, although the shop equipment and skills exist in Mexico to make them. Nobody has gone to the expense of making up dies to stamp out the heads in the larger sizes. At least one shop is beginning to stock large heads bought in the States, so

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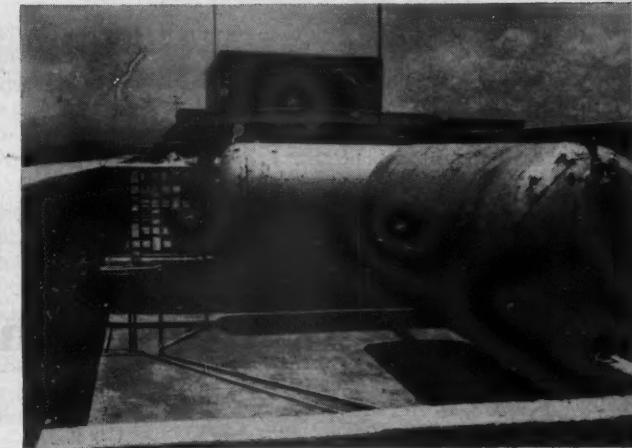
that it can make up tanks to order on short notice. Tank manufacturing will certainly get underway as butane becomes more plentiful and the advantages of bulk storage for farms and industries are more fully appreciated. Local manufacture of motor fuel tanks, at prices much below those for imported tanks, is a must before LPG carburetion can get started.

Mexican L. P. gas dealers are frequent visitors to the U. S. They come to arrange for purchase of gas, and to buy new tank trucks, pumps, hose, connections, tanks, etc.

There are at least two import companies in Mexico which carry good



Truck converted to LPG in 1951 by Mr. Mario Lozano (left) of "Gas Lozano", Torreon, Mexico.



Left: LPG Bulk Plant at Tampico, Mexico, is located in orange grove. Right: Apartment tenants are supplied with LPG from these two 1000-gal. tanks located atop 12-story structure in Mexico City. LPG is piped from street level during filling operation.

inventories of LPG equipment—everything from flare nuts and copper tubing to 1000-gal. tanks.

Butane is being used in cotton dryers in northern Mexico. Several people have devoted a lot of time, study and work to the L. P. gas conversion field, and no doubt as conditions become more favorable, this business will prosper in Mexico.

The writer was surprised to find that no trade journal is published in Spanish even remotely concerned with the LPG field. He found, however, that "Butane-Propane News" is widely read in the trade, even by furniture dealers just getting started in butane. So they do keep informed.



Delivery trucks operating on LPG are equipped with J & S carburetion and are used by "Gas Lozano" De Mexico, S. A., in Mexico City.

Gleaming white trucks are operated by "men in white" at the Waco Butane Gas Co. Trucks get a scrubbing and touch up on paint every week.



"Stunt Promotion" Not Required to Build Outstanding Volume for Texas LPG Dealer

By Gene Creighton

WHILE the present-day trend is toward gala promotions, price juggling, contests and the like to attract public attention, at least one central Texas L. P. gas dealer has proved that "stunt promotion isn't necessary to do a worthwhile volume."

The firm is Waco Butane Gas Co. at 3407 Franklin Ave., in Waco. It was established early in 1937, and is the oldest firm in the "Centex" area.

Currently operated by three partners who include Tom Shofner, Jr., former owner of Brazos Butane Gas Co., and D. J. and Mrs. R. T. Sullivan, Waco Butane Gas got its start and built up to its present impressive dimensions under the management of R. T. Sullivan, who died in early 1951. Since the reorganization which

followed in June of 1951, the present partners have perpetuated the founder's policy, which was to operate a "service organization on as dignified a basis as possible."

Mrs. Sullivan, who takes an active hand in every aspect of the firm's operations, feels that flamboyant merchandising methods have no place in the liquefied petroleum gas distribution field. "The supply of heat and cooking fuel is one of the most basic services possible," she indicated, "and it has been upon that premise that we have shaped all of our developments. Though most people admittedly give a lot of attention to stunt promotions, we feel that the public regards such with no more than curiosity for the out-of-the-ordinary, and that when time comes for actual ordering of gas service, it will be the firm which carries a reputation of reliability which will get the business."

Thus, the "merchandising plan" of Waco Butane Gas Co. consists of a few simple points. They are, first, a well managed, efficient service department which exercises a constant program of preventive maintenance on tanks and gas appliances; second, a policy of portraying maximum eye appeal in appearance on all delivery trucks, bulk plants, storerooms, etc., and finally, swift, reliable service over a territory extending 70 miles from the Waco center.

Waco Butane Gas Co. currently has more than 2500 accounts on the books, including "cash stops," of course. These are served through four bulk plants, including an 18,000 gallon unit, a 12,000 gallon unit, and 6000 gallons at the Waco headquarters, plus a "relief bulk storage plant" at Crawford, Texas, far out in the country. The trucks which travel over the huge territory serviced, and which pick up the gas loads at these

points, are remarkable for their immaculate all-white paint jobs, scrupulously maintained with a thorough scrubbing down and touching up every week of the year. All drivers wear white coveralls, change them whenever the slightest soil mars their appearance, and are charged with the responsibility of keeping the trucks as fastidiously clean as any customer's kitchen. Regularly scheduled repainting, replacement of lettering on the sides of the tanks or cabs, and equal attention to the undercarriage, wheels, and running parts of the trucks have insured that all catch attention wherever they go.

Clean Trucks Remembered

"We have had a lot of new customers out on the routes tell us that they did not remember the firm name, but did remember the clean-looking white trucks," Mr. Shofner grinned. "Therefore, any advertising we use, our letterheads, direct mail, etc., all carry some reference to the all-white delivery units."

The showroom, which closely resembles a white frame bungalow, on a shady, landscaped street south of Waco, is likewise regularly refinshed and harmonized with the rolling stock.

Backing up its impressive fleet, Waco Butane Gas Co. puts a lot of emphasis on "automatic service" which is carried out by a crew which contains a full-time mechanic and helper, and two drivers who are both experts with tools and qualified to make repairs of any type. Instead of waiting for service calls to come in, the maintenance personnel are assigned specific routes and simply carry out a continuous "inspection program" which means that forthcoming damage is prevented before it has an opportunity to become serious. Naturally, there are many interruptions in such an overall inspection program, but as soon as emergency repairs are completed, the program pushes forward. Almost every installation on the huge chain is bound to be visited at least once a year.

Similarly, an automatic gas delivery system has been worked out, whereby each man servicing his own routes will contact the customer at least once every four weeks, and usually once every three weeks. Under the "automatic proviso," which

has been worked out with customers, tanks are merely filled up and the customer billed without it being necessary to make special arrangements. "Most of the time, the customer gives no thought to the gas service he is getting, unless the gas tank runs dry," Mr. Shofner smiled. "Therefore, we forestall as many such instances as possible by extending ourselves to visit every gas drop regularly enough to prevent it."

During all of its merchandising history since the end of World War II, Waco Butane Gas Co. has developed only one "giveaway." This is a rain gauge, consisting merely of a plastic tube, attached to a sheet of white-enamed metal, and arranged to stand conveniently out in the open, measuring rain in the tube, against a printed scale on the side. Because rain is of primary, or even critical importance in dry central Texas, this gift was avidly snapped up by every farmer to whom it was offered, and resulted in an all-time record number of new customers in the farm and stockranch area. The Texas L. P. gas dealership had to reorder several times, in order to keep up with the demand, but eventually had serviced all of its rural customers with these handy "gadgets."

Another unusual example of promotion with dignity which is carried out by the firm has been the equipping of every person on the payroll with a butane-operated cigarette lighter. Out making prospect calls in the area, or discussing butane gas with anyone, each employee thus has an "operating sample" with him ready for operation at a moment's notice.

Cigarette Lighter Advertising

"We have a lot of regular users of butane gas at present, who had no idea what the fuel was, until they saw it burn in a cigarette lighter," Mr. Shofner smiled. "Needless to say, carrying a lighter in this way has proved a valuable selling asset for our routemen."

As the above indicates, all of the "selling" done by the firm is in the hands of its well-trained routemen, most of them veterans of much experience, and one of them on the payroll for more than 17 years. Drivers are awarded a straight 5% commission, paid every month on new accounts developed, on appliances

sold, and through other revenue-producing work. The white frame showroom near Waco has ample space to display eight ranges, a dozen refrigerators, a variety of automatic gas dryers, space heaters, central heating equipment, etc. Still, there is no "specialty selling effort" whatsoever. Instead, all of the route servicemen are encouraged to learn as much as possible about every appliance through regular meetings, studying manufacturers' literature, etc., and to try their own hands at selling. Very seldom does a month go by in which all routemen are not rewarded with commission checks. "That's as far as we go," Mr. Shofner said. "We use very little newspaper advertising, no radio, no price markdowns, or sensational stunts at all. We believe a good, reliable name, backed up with service financed by the funds which otherwise might go into advertising, is far and away the best means of increasing our gas volume year after year."

California Firm Good Sports

A King City, Calif., LPG company believes in good sportsmanship—and carries out that conviction in active service to the community. For four years the Van Horn Butane Service has sponsored a baseball team in King City, and declares that in dividends of good-will they have more than realized their investment.

In addition to the baseball team, Van Horn also sponsors a basketball team. M. F. Van Horn, owner of the firm, says of the organization's program that it is the best method of institutional advertising they have ever used and suggests its effectiveness in any rural community.

Connecticut Dealer Expands

Lyn-Gas Co., Inc., Pine Meadow, Conn., has leased part of Baldwin's store on Railroad street in Canaan for sales and service of propane gas. Miss Eileen Fritz of Winsted will be in charge of the office.

The company was established in 1939 by three Lynch brothers and incorporated in 1946.

The company has a bulk storage plant in Pine Meadow and a tank truck for metered gas service. It covers the areas of Litchfield county, Berkshire county, Hartford and New Haven counties and Waterbury and Naugatuck.



Let's make SAFETY Everybody's Business

No. 9

Suggested Program for Safety Meeting

- 1 — Have those present sign the attendance sheet, and note any absentees.
- 2 — Make proper disposition of any pending safety problems resulting from previous staff suggestions.
- 3 — Call for any new suggestions or proposals affecting safety matters within the company, and take appropriate action.
- 4 — Discuss "Let's Make Every Water Heater, Clothes Dryer, and Incinerator Installation Safe," which appeared in the September issue.
- 5 — Announce date, subject, sources of material, and study assignments for the next safety meeting.

DISCUSSION GUIDE FOR

"Let's Make Every Water Heater, Clothes Dryer, and Incinerator Installation Safe"

1. These are rather difficult subjects to cover with demonstrations without extensive preparations in advance. We suggest that the discussion be placed in charge of a well-informed service man, who will conduct the discussion of the individual problems with the object of seeing that every employe has a thorough understanding of that particular subject, and such related matters as may be brought up.
2. Problems 2 and 3 have customer relations angles as well as the technical sides. It will be a good idea to stress these human problems, bringing in suggestions from the sales department, or from a service man who has better than average sales ability.
3. Problem 4 is typical of those arising from the use of water heaters in closed systems. Particular stress should be placed on the importance of pressure relief or pressure controlled safety devices in all systems where excess pressure cannot be readily relieved back to a gravity supply. Included in the systems requiring the special relief precautions are all individual or community "pressure plants" with automatic pumping facilities, and all services in which check valves have been installed. In some localities, the applicable codes or local regulations require excess pressure protection on all

hot water installations in schools and other public institutions.

4. If your operation includes servicing any butane installations, we suggest a very thorough review of this whole situation, and a frank discussion of the problem of keeping propane out of butane tanks. The advantages of propane, and the reasons for the present trend toward installation of storage equipment designed expressly for use with propane, should be made clear. Since most operators in former butane territory are now endeavoring to eliminate butane storage tanks, replacing them with propane tanks, it might be a good idea to discuss what can be done with retired butane tanks.
5. A nice demonstration can be arranged for Review Question problem 2, using an empty cylinder containing a slight amount of vapor but no liquid, a filled cylinder, a manually controlled changeover valve, the Rego valve, and any range or hot plate that happens to be handy. Allow the burner to exhaust the little gas remaining in the empty cylinder, with the cover off the automatic shut-off valve, and let the group see the valve plunger drop when the pressure falls off. Switch to the filled cylinder, and show that the shut-off valve does not open—that gas will come through only after the shut-off valve has been re-opened manually.

Let's make SAFETY Everybody's Business

he was survived by his
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and Richard. Services will

Let's Always **DRIVE SAFELY**



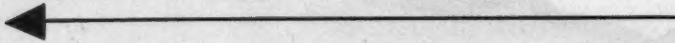
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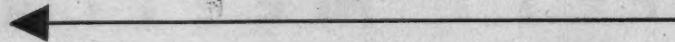
The poster on the other side of this page
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Meeting covering

**"Let's Drive These Vehicles
Safely"**

(See opposite page)

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* *Another poster comes next month.*



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Let's make SAFETY Everybody's Business



Let's Drive Those Vehicles Safely

By Carl Abell

YOUR boss has probably made some emphatic and unkind remarks about the rising cost of insurance on the company's delivery fleet. He is right in being disturbed, for in the past few years the rates on public liability and property damage have climbed sky high. They have become one of the company's heaviest operating expenses.

The insurance situation in our industry is far from satisfactory. In addition to conditions within the industry, it reflects rising costs from growing hazards over which we have no control—steadily increasing traffic and the greater "exposure" which it produces, and the alarming tendency of juries to award astronomical damages for personal injury cases that are taken to court.

These all add up to higher costs of doing business, reduced profits, and limitation of opportunities for workers to advance and increase their earnings. High insurance rates, like high business taxes, hurt every employee!

The problem of establishing equitable and fair insurance rates for the L. P. gas industry is something that is beyond the scope of any single company in our business. It is being worked on at "top level," and progress is being made in several major marketing localities. But it is only progressing on the basis of demonstrated records for safety. Nothing but facts will ever check these rising costs, or bring them down to earth. These facts are produced by the day-

by-day performance of the men who drive the trucks, and today's accident figures are too high.

Every major accident in which an L. P. gas delivery truck, service truck, or transport is involved, hurts the entire industry.

It is not enough that our record should be as good as the average. It must be better. Our vehicles are carrying a cargo that is listed as "haz-

You must think for two drivers—
Yourself and the other fellow.

ardous." The record shows that in nearly all of the traffic accidents affecting our industry vehicles, the cargo is not involved in any way. But there are occasional isolated cases in which a traffic accident causes the escape of fuel, which if ignited can have serious consequences. Because this can happen, we must all take this traffic hazard situation seriously. The insurance companies take it most seriously. They sometimes even refuse to insure certain operators' vehicles, because of a succession of minor accidents which in themselves are insignificant, but which indicate a laxity that may at any time result in an accident of disaster proportions. The only way any operator can prevent this action on the part of insurance carriers is to maintain a low accident record.

This can be accomplished. It has been accomplished on a scale far

larger than the operation of any company in the L. P. gas business. The major petroleum companies conduct safety contests under the auspices of the National Safety Council. The records show that in the truck operations of the marketing divisions, the company in the top position has had only one-eighth as many accidents per 100,000 miles of vehicle operation as the company in tenth position. The company now in the top position for accident-free operation, General Petroleum Corp., has been there most of the time for the past 10 years. Yes, it can be done.

Safe driving is the result of a state of mind. It is a blend of knowledge, judgment, instinct, habit, and constant alertness. The safe driver must not only think for himself—he must also think for the less safe drivers who are out on the road at the same time. He must anticipate what these other drivers may be going to do, and make room for them to do it. This problem was summed up by a veteran truck driver, when asked how he managed to drive half a million miles without an accident, in these few words: "I always arrange to keep a little air between my truck and the other vehicle."

Statistics show that trucks are involved in about twice as many accidents per 100,000 miles of operation as passenger cars. They are larger, heavier, harder to control, travel more miles per year and by the nature of their operation they are more likely to be on the road during bad

Material for Employees to Study for Tenth Safety Meeting

Drive safely-don't become a statistic.

weather, when visibility is not so good, and road surfaces are slippery. Truck drivers also become tired from long hours of work, which does not help them to keep alert. All these factors add up to more chances to have accidents.

Even the best driver can not turn in an accident-free record unless his vehicle is in safe operating condition. Management can see that the vehicle is properly equipped for safe operation when it is new, and can provide facilities to keep it in safe operating condition. A maintenance shop staffed with highly skilled workmen can go a long way toward achieving a commendable safety record, but it is practically helpless without the cooperation of the drivers.

The first person to become aware of an unsafe condition in a vehicle is the man who drives it. The best maintenance department in the world can not keep up with the service needs of a fleet unless the drivers tell them what is going on. All big truck and bus operating companies require the drivers, as part of each day's work, to report in writing any defects in the vehicle's mechanism which have come to their attention. Failure to report bad brakes, defective steering mechanism, or any other vital defect, is just as serious a breach of discipline as reckless driving. And the report must be in writing to avoid any possible alibis for sending a vehicle out in defective condition.

Someone has to inspect the vehicle after the repairs have been made, to determine that it is again in safe operating condition. Large fleets almost always have highly trained inspectors who are responsible for this part of the operation, and if the reconditioning is not acceptable to the inspector, the vehicle does not go out. In small fleets, such as the average L. P. gas operation, this inspection is sometimes done by the mechanic, sometimes by the driver, and at other times by the manager. Experience shows that inspection by the manager is best, and that the mechanic who does the work is the least desirable person to pass on the adequacy of the job. He may know a great deal more about the technicalities of the job than the driver, and he may have

enough moral strength to refuse to turn the vehicle out for service until it is right, but the driver who is not convinced that his truck is in safe operating condition is not in the proper mental state to drive safely.

The smart driver gives himself a chance to avoid accidents by checking his vehicle before taking it out of the yard. This not only saves accidents, but also time, and the employer's money. It is much quicker and easier to correct a wrong condition before the truck starts on its daily rounds than to discover an urgent need after the truck is on the road and then try to correct it on an emergency basis.

The truck must run, so we see that it is supplied with fuel, oil, and water. While we are about it, we should check these systems for leaks. Let's give the whole truck a quick look-over for things that might be wrong. Is there any water or oil leaking on the ground, or any evidence of hydraulic brake fluid dripping? How

There are two kinds of pedestrians—the quick and the dead.

about the tires? Are they evenly inflated, without any bulges, blisters, cuts, or other indications of weakness? You may be going out over dirt roads, or into a soft field, before the day is over. What a heck of a place to change a tire! And blowouts generally occur during the hottest hours of the day. If any tires are defective, the place to change them is in the yard, and the time is early in the morning, while it is still cool.

We will naturally check the brakes—both foot and hand brakes. And since hand brakes sometimes ease their grip as the drums cool, we have wheel chocks to be absolutely sure that the truck does not move off with a hose connected and without a driver. Like the pessimistic gentleman who always wore both suspenders and a belt, let's make sure. And the best way to be sure that the wheel chocks will not get lost in transit is to chain them to the frame, then provide a place to carry them where they will not bounce out going over rough roads.

Our morning inspection should also include looking over the lights, mirrors, reflectors, chassis springs, steering connections, wheels, and all body

parts to see that nothing is bent, broken, loose, misaligned, or missing. The lights should be turned on to see that all filaments are burning. At least every six months, all exposed electric wires should be checked to see that all connections are tight and that the insulation is sound. Any defects showing up in any of the above units can be the cause of accidents, as well as delays on the road.

The fire extinguisher should always be on board the truck, and it should always be fully charged. There is nothing quite so futile as to grab a fire extinguisher for emergency use, open the control valve, and find that nothing happens. The boss has probably told you to report every time that you use the extinguisher. If he has not told you, you should tell him, because your life, as well as others, may some day depend upon having that fire extinguisher available and ready for use. It may be some other car or truck on fire along the highway that brings the need for the fire extinguisher. It should never be the L. P. gas delivery truck that is burning. It should be a standard procedure in your company to keep engine clean and free from accumulations of oil and dirt, so leaks of fuel or oil may be quickly detected in the daily inspection, and corrected. This will prevent the number one cause of truck fires.

The good driver will be thoroughly familiar with the state and local traffic regulations, and will observe them completely. These regulations are based on experience, and were drawn up to prolong the lives of those who use the highways. Some drivers feel that these rules impose hardships, and that they are "just for beginners." Any driver who cannot overcome this feeling of superiority should be taken from behind the wheel before he prevents himself from achieving status as a mature driver. The man who said, "Drive carefully—the life you save may be your own" could not have said more in four times as many words.

According to the figures compiled



Speed is still the No. 1 killer.

Courtesy is contagious

by the National Safety Council and by numerous insurance companies, speed is still the number one killer on the highways. What constitutes high speed driving cannot be defined in terms of miles per hour. What might be safe in full daylight, on an open road with light traffic, no blind intersections and in good weather, will be too fast if the view is obstructed by hills or curves, if traffic is heavy, if the road is slippery, or after sunset. Any time a vehicle is driven so fast that it cannot be stopped, under the conditions then prevailing, before it collides with something else, it is being driven too fast.

Check Stopping Distances

There is a widely published table, reproduced herewith, which gives the distances in which a vehicle should be able to stop. The lowest figures apply to ideal conditions, with good brakes, good tires, and level, dry pavement. Under all other conditions except when stopping on an up-grade, you can expect to require more distance to stop. Checking this schedule against the speed regulations in your own locality should convince the most over-confident driver that the legal limits are not too low. No business is so urgent that unnecessary chances should be taken, and employers are not in the habit of paying traffic fines or serving jail sentences for employees who find they cannot drive within the accepted safe driving limits.

Drivers who make unusually good records for accident-free performance give a large share of the credit to their habits of "defensive driving," or if you wish to give it a higher social standing, to "courtesy in driving." In either case, the procedure is the same. You anticipate what the drivers of the other vehicles will want to do, and then give them a chance to do it. No matter how crazy, or how completely in violation of the highway traffic regulations, you let the other do it. Particularly if his action involves taking the right-of-way which the traffic regulations say belongs to you. The right-of-way law is absolutely useless in preventing accidents unless both parties understand and abide by it. On this point, you can never be sure until at least one of the vehicles is through the intersection. In case you doubt the other fellow's mental ability, it is always safer to let him go through first. In racing for a corner, a tie is the worst possible result.

Useful Driving Suggestions

Here is a set of useful suggestions on defensive driving which was distributed to all drivers by a big trucking concern:

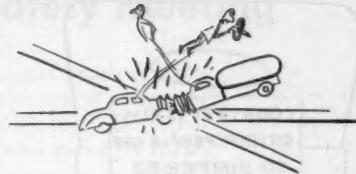
"The defensive driver never puts complete faith in the other fellow's hand signals.

He is always prepared for the motorist who ignores stop signals.

He knows that some drivers will turn right even when traveling in the left hand lane, and signalling for a left turn.

He keeps out of collisions by slowing down at intersections.

He avoids ganging up and following other vehicles too closely.



In racing for a corner a tie is the worst possible result.

He keeps to the right and lets inexperienced and speeding drivers go on their way.

He never overtakes on a hill or on a curve, and never crosses the double line on the pavement.

He pumps the brake pedal to flash a stoplight warning to the motorist behind.

He gives adequate, and timely signals and has the necessary skill to provide that added margin of safety in emergencies."

There is another phase of courtesy in driving which is worthy of the consideration of anyone who gets tired on his job—and that certainly should include all L. P. gas drivers. That is its reaction on the driver who shows the courtesy. Let's consider a specific case, on a clinical basis, as the doctors say.

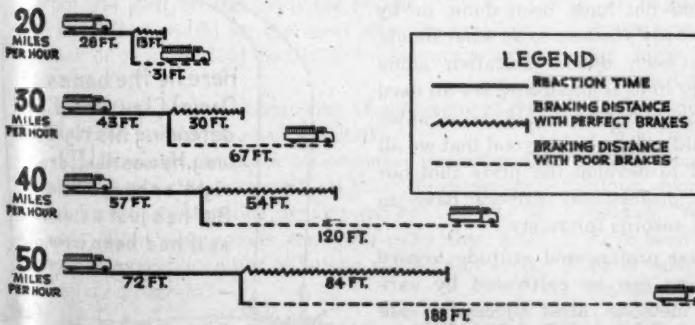
Courtesy Gets Results

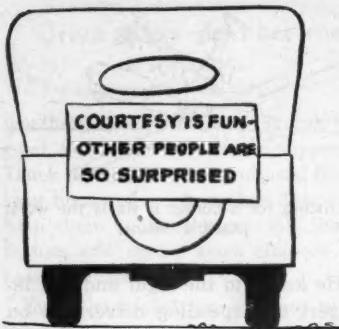
We have a friend who drives a great deal in Hollywood, where the percentage of people racing for and demanding the right-of-way is probably higher than in any other community in the United States. Bill was becoming a traffic neurotic, fighting for the right-of-way like the local morons, and trying to get through with profanity when mere horsepower failed. He was well on the way to becoming a nervous wreck.

One day his eye caught a sign on the back of a hot-rod—"Courtesy is fun—other people are so surprised." It registered in his mind, and a moment later a long-nosed dowager in a Cadillac bore down across the corner that he had just entered. He not only stopped to let her through, but also smiled and waved her on. Her grim look thawed into amazement, and as the situation finally dawned on her, she returned his smile—and slowed down.

Bill continued to give way to less courteous drivers all that day, and

AVERAGE REACTION TIME AND BRAKING DISTANCES





reported later that he had never had so much fun in his life. Truly, other people were surprised. And he kept it up until it became a fixed habit. He is no longer neurotic—he can drive through Hollywood traffic all day, and come back relaxed. Previously, each day's emotional strain had left him exhausted in mind and body, a candidate for a self-induced sun-down accident. Tired drivers react slowly, and consequently have more accidents than while they are still fresh and vigorous. Courteous driving can go a long way toward preventing premature tiredness.

In spite of all the courteous, careful driving, accidents can be forced upon us. When your vehicle is involved in an accident, there are several things that should be done quickly. If people are injured, they should be safeguarded at once. If you are driving a gas delivery truck, and it can be moved, it should be put off the highway at a safe distance from any other vehicles, so if one or another of the vehicles should take fire, the flames would not be transmitted to others. It is most important that you get the names and addresses of any witnesses who may have seen the accident—and get as many as possible. Even though you feel that you have caused the accident, get those witnesses. You may hesitate to do so because of the fear that it will put you in a bad spot. Brother, you are in a bad spot already, but without the testimony of the eye witnesses you may be considerably worse off. There have been cases on record in which witnesses who came along later gave versions of the accident which did not conform to the facts, and whose testimony resulted in jail sentences and awards for damages which were not justified at all.

L. P. gas truck drivers, particularly those handling bulk deliveries, have

one accident problem which does not affect the average truck driver. They have to drive in and out of the premises of a great many domestic and agricultural customers. It frequently happens that the access to the tank is limited in area, and that the truck must be backed in or backed out. Damage to fences, trees, shrubbery, clothes lines, children's toys and numerous other accessories is quite possible. One of the worst farmyard accidents is to drop a wheel into a septic tank. Needless to say, the driver should be most careful when backing around in a customer's premises, even to the extent of getting down from the cab to see how he is doing. And he must be constantly alert that no children playing in the vicinity get under the wheels of the truck.

Details Deserve Attention

Safe driving is the result of constant attention to many small details. In time, the habit of watching these details becomes second nature. But without constant reminding, the average individual does not form the right driving habits, hence he tends to become negligent, and then he has accidents. It is a matter of record that no large fleet operator has ever had a good safety record without an active safety training program sponsored by top management. It is also a matter of record that such active safety programs, with appropriate pressure from above and cooperation all down the line, have never failed to improve the company's accident record.

In a careful study of the results of these fleet programs, one thing stands out. With the exception of the very few accidents that result from unpredictable mechanical failures, and these are very rare, accidents did not just happen. They were caused, either somebody committing an act that should not have been done, or by somebody's failure to do what should have been done. Education along safety lines is important. We all need to know what we should and what we should not do, but beyond that we all need to develop the pride that our best professional drivers have in their records for safety.

That professional attitude toward driving can be cultivated by various methods. Most successful safe driving programs combine rewards

Someone always brings up the question that certain individuals are of the type known as "accident-prone." That is no idle dream. In driving, as well as in all occupations involving personal risk, the majority of the accidents are caused by a small percentage of the people. These accident-prone individuals are on the highway, and it is almost impossible to keep them off. But there is no reason why any of them should be driving L. P. gas trucks.

Accident-proneness exists in different degrees in different individuals. For the mild cases, there may be some hope of a cure through education, but it is a long, tough, and risky procedure. The serious cases should never be allowed to drive company vehicles. For their own protection, as well as for the best interests of the business, they should be transferred to other work offering minimum possibility of serious accidents.

and recognition for sustained safe performance, and penalties for accidents for which the driver is proved responsible. Contests are desirable to develop the competitive team spirit that stimulates pride in accomplishment. Your company should have a safe driving program, patterned to fit the needs of the business and the number and the personalities of the employes. The National Safety Council can make general suggestions for such a program, but to be most effective it should be worked out in detail to fit the peculiar circumstances of your own company. And it will be more effective if the details of the program are worked out by the employes who will participate in its operation.

Here lie the bones of Daniel Clay who died defending his right of way. He was right, dead right as he sped along. But he's just as dead as if he'd been wrong.

Problems For Discussion At Tenth Safety Meeting

In nearly all L. P. gas operations the cost of public liability and property damage insurance on the company vehicles is the largest single element of insurance expense. For the past several years the rates have increased, until they now represent a staggering burden on the industry. What your company must spend for insurance can never be available to provide the means of a raise in your pay, or finance the growth that will give you the opportunity for a better job.

Insurance costs can only come down on the basis of an industry-wide record for safety. That record is the sum of the experience of all companies, which is in turn the record of the individuals in each company.

You, personally, have a future stake in the safe operation of all of your company vehicles; unless you operate your assigned vehicle safely, you may not be here to enjoy that future. Death is a very permanent arrangement. Even the loss of an arm, leg, or eye can be awkward.

Nearly all traffic accidents are avoidable, and no accident that you are able to prevent will ever deprive you of life, limb, or opportunity.

The basis of all successful accident prevention programs is a single word—THINK. Thinking is hard work, and to be effective in this case, it must be done in advance, and must become a habit.

These problems are not the end of your thinking on safe driving, and we hope they are not the beginning. We hope they will stimulate your thinking, and possibly save a few lives, one of which may be yours.

Problem 1

Suppose that your company is developing an inspection system designed to prevent accidents and breakdowns due to mechanical failures, and has asked each driver to submit his ideas for a daily "check-up" before starting on his route. What items would your suggested inspection cover? If you were the manager, how would you make sure that this inspection is performed before the vehicles leave the yard?

Problem 2

A truck is mostly steel, and steel will not burn, yet every little while we hear of a truck "burning up" as the result of a traffic accident. What conditions make these fires possible? What can be done to prevent such fires, other than to drive safely and avoid accidents if possible?

Problem 3

Suppose that your company has decided to participate in a state-wide contest to reduce highway and traffic accidents, and has called for suggestions from the staff on the following points:

- (1) What would be the most effective arrangement of rewards and penalties to encourage safe driving?
- (2) What plan of recognition of achievement do you think would be most effective?
- (3) How can the truck maintenance department be fitted into this program? (If your company has a separate maintenance department.)
- (4) What suggestions can you make that will derive favorable public relations value from such a safety program?

Problem 4

How do you figure the safe distance when following another vehicle on the highway?

Problem 5

When endeavoring to control a skidding vehicle, do you (1) put on the brakes? (2) throw out the clutch? (3) turn the front wheels? (4) which way do you turn the front wheels?

Problem 6

A delivery driver in a company truck was involved in a collision with a privately owned automobile at an intersection. A young woman in the automobile received a disfiguring cut on the face. There were no witnesses, and it was not determined which driver was actually responsible for the accident.

Investigation disclosed that the truck brakes were defective. Because the truck was not in safe operating condition, the court ruled in favor of the girl, and assessed damages against the company. The claim was paid by the insurance carrier.

It happened that on this particular trip the driver was using a truck which he had not driven for some time. He discovered that the brakes were bad after he had left the plant. What should he have done?

Who was responsible for this accident? The driver who took out the defective truck? The previous driver, who had failed to report the bad brakes? Was it the company manager, who might have been tougher about the condition of the company vehicles? Or is this one of those cases where team-work for safety is the only answer?

SEE PAGE 129 FOR THE ANSWERS TO LAST MONTH'S SAFETY PROBLEMS

The Care and Feeding of L. P. gas Regulators

By R. C. Lisk

Assistant Sales Manager
Fisher Governor Co.
Marshalltown, Iowa



Nothing responds so well to good housekeeping and is so grateful for a little loving care as an LPG regulator.

THERE is nothing in an L. P. gas system which takes so much abuse, performs so well, of which so much is expected, or which costs so little as the regulator. There is nothing which responds so well to good housekeeping and which is so grateful for a little loving care. The L. P. gas regulator will give years and years of use but will be laid low by a little careless abuse. The care and feeding of L. P. gas regulators is a simple matter but if this simple matter is overlooked, all kinds of trouble can result.

Chips of dirt, pipe scale, pebbles, and other foreign materials, roughly classified as "Mr. Chips," cause 95% of all regulator trouble. If you were able to feed the regulator nothing but pure, clean gas, your service calls and repair work involving regulators would virtually disappear. See Fig. 1 for where and how "Mr. Chips" does his dirty work.

When a regulator is manufactured, the component parts most carefully watched are the orifice and the soft valve disc. The disc must be of the finest synthetic rubber and be perfectly smooth and flat. The orifice must be absolutely free of nicks and the "nose" properly formed. Any deviation from these specifications results in a defective regulator and will cause rejection during assembly inspection.

If a little dirt or a chip gets washed down the gas line into the regulator inlet and lodges between the disc and the orifice, all our painstaking work is blown sky-high.

What makes the dirty work of "Mr. Chips" easier is the fact that the disc rarely ever moves more than a few thousandths of an inch away from the orifice, even on heavy loads. Even though a properly designed L. P. gas regulator has a tremendous amount of force available to move the disc against the orifice, you demand so much in the way of performance that just a little dirt can cause a big headache. As might be expected, the trouble shows up when there isn't much of a demand for gas—maybe just pilot lights. Then the disc has to move right up against the orifice to throttle the very small flow. Perhaps the load amounts to only one-half a cubic-foot-per-hour or less. If "Mr. Chips" holds the disc away enough to allow just a little more than that, the pressure in the house piping will

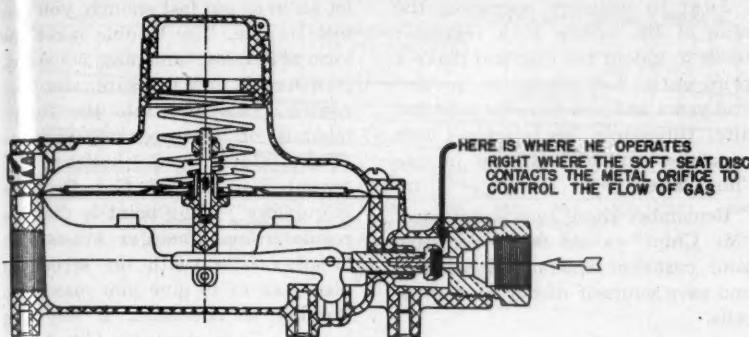


Fig. 1.

build up above the desired appliance pressure. If it is one of those installations where no constant burning pilots are involved, the regulator has to shut off completely tight. There can't be any flow at all, and yet this lock-off must be accomplished without an objectionable buildup in house line pressure.

Buildup Costs You Money

You might take the attitude that a little buildup doesn't hurt anything because that same buildup in pressure acts on the regulator diaphragm and tends to shove the disc harder against the orifice and thus overpower "Mr. Chips." True, as far as it goes. But excess appliance pressure means customer service calls—and irritating ones. The pilot lights keep going out, the flames lift off the burners, appliances won't do what you said they would, etc. Actually what happens in most cases is that the buildup is enough to open the relief valve and discharge the excess

pressure (some of it) to the atmosphere, with resulting loss of gas.

Did You Say Relief Valve?

Sure, every L. P. gas regulator reducing down to house line pressure has a relief valve built right into it. Take a look at Fig. 2 which shows the names of regulator components. Note that above the regulator diaphragm there are two springs. The big one is the "loading element" that you adjust to change the regulator discharge pressure. The little one, down inside the big one, is the relief valve spring. If you want to see this up close, take a look at Fig. 3.

It doesn't take too much time to figure out how it works. If you held onto the valve lever and pushed up on the diaphragm, you would push the diaphragm away from the cup which forms the relief valve seat. Since there is gas pressure under the diaphragm and only air above it, gas pours out between the diaphragm and the relief valve seat. It does

what a relief valve is supposed to do—it relieves pressure.

It will be seen, of course, that both the main spring and the relief valve spring are acting to hold the diaphragm down on the relief valve seat. Obviously, if the relief valve is to open, the gas pressure under the diaphragm must be great enough to overcome the force of both springs. And something must keep the valve lever from moving. Please go back again to the picture of the cutaway regulator. Note that when the disc is against the seat, trying to shut off the flow of gas, the valve lever just can't move any more.

The Law Steps In

Naturally, we don't just pick up any two springs we happen to have around and then let the relief pres-

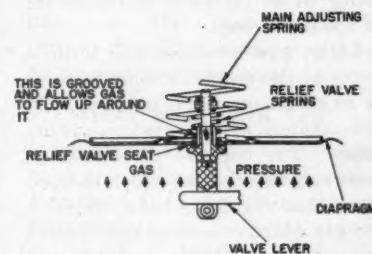


Fig. 3.

sure be whatever it takes to overcome those two springs. NBFU Pamphlet No. 58 gives us the word on this. And since Pamphlet No. 58 has been adopted as the official set of rules in many places, the law steps in.

Briefly, the law says that the relief valve must function to open somewhere between twice the appliance pressure (which would be two times 11-in. W.C. or 22-in. W.C.) and three times the appliance pressure (which would be 33-in. W.C.). Furthermore, it must "reseat" at a comfortable margin above 11-in. W.C. in case "Mr. Chips" loses his grip and pressure conditions go back down to normal.

So what we do is design a special relief valve spring which, in combination with the main valve spring, allows gas to escape when the pressure in the house piping climbs above 22-in. W.C. This special relief valve spring isn't adjustable. It is fixed, and it is fixed on purpose so that someone can't tighten up on the relief valve instead of repairing the regulator.

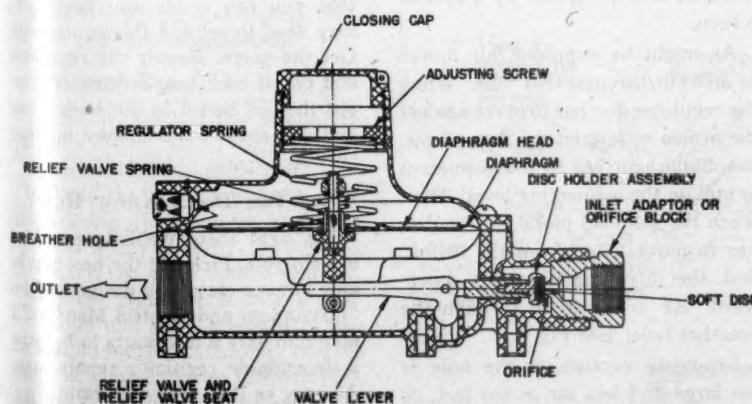


Fig. 2.

The High Cost of Complaints

Picture a happy customer. He is well satisfied with the many benefits of your gas service! Contented with his gas bill! Plays a fair game of golf! Doesn't smoke too many cigarettes! Treats you like a gentleman!

Enter "Mr. Chips." The pilot lights go haywire. Somebody smells gas somewhere. The cylinder or tank of gas is gone in about one-third the time it should have been. Gone is that blissful picture of a contented customer. In his eyes you have suddenly become a scheming pirate deliberately trying to bankrupt his household budget.

In frantic haste, you send out a new man (he is the only one available). He puts on a new regulator and reports that the old one "ain't no good—the gol-dang thing leaks gas out that hole in the side." So your man throws the "gol-darn thing" in an old barrel in the corner of the back room.

Later, you sit down and write a letter to the regulator manufacturer to let off steam. He is unhappy, you are unhappy, and the customer is unhappy. The truth of the matter is, however, that the gas which escaped from that regulator relief valve is the gas which otherwise would have over-pressured the house lines and created a very hazardous set of conditions. Everyone concerned should be pleased about the whole situation.

Naturally, they aren't. "Mr. Chips" accomplished his mission!

Mr. Chips Has Some Imitators

Previously we pointed out that one of the most critical items in the manufacture of a regulator is the shape of the orifice "nose." Not only must it be carefully made, but it must be carefully handled. Even a small nick (one you can't see without a glass) will prevent the regulator from doing the job on lockup that it should do. When a regulator is taken apart, the orifice should be guarded as closely as the works of a watch. If you drop it, throw it away. Since it is impossible to re-machine an orifice, and a replacement doesn't cost much, it would be a waste of time to fool around with it. Don't let anything metallic or hard touch the nose. Notice that when the regulator manufacturer ships replacement orifices, he coats them with plastic or wraps them in cotton. There is a reason.

Just in ordinary operation, the nose of the orifice in a regulator tends to indent the disc and make a print on it. Let this go on for several years and you have an indented disc. Ultimately this interferes with regulator control and may imitate "Mr. Chips."

Remember these two imitators of "Mr. Chips"—avoid them—and save your customer appliance headaches and save yourself money on service calls.

The Other Five Per Cent

Remember, we mentioned that "Mr. Chips" was responsible for 95% of all regulator troubles? The other 5% we can blame on such things as freezing, mechanical abuse of threads, and interference with breathing. As far as freezing goes,

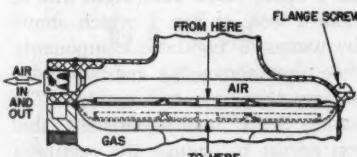


Fig. 4.

this is a subject in itself (Fisher Governor Co. Bulletin LP-10). As far as mechanical abuse is concerned, no comment is required here.

Breathing trouble is a different matter. "That hole in the side" which the service man referred to is there for a definite purpose. Turn back again, if you will, to the picture of a cutaway regulator. There you will see that the chamber above the diaphragm is completely enclosed by the spring bonnet except for a small breather hole protected by a special screen.

As might be expected, air moves in and out through that hole. When the regulator disc has to move against the orifice to restrict the flow of gas, the diaphragm has to move upward to pull on the connecting lever. Then when the gas load picks up, the disc has to move away from the orifice, and the diaphragm moves downward. Air is pulled in through the breather hole. See Fig. 4.

Strangely enough, if the hole is too large and lets air in too fast, or if the hole is too small and doesn't

let air in or out fast enough, you run into trouble. The trouble takes the form of buzzing, humming, whistling, poor lockup, low pressure, and poor control. This dips into the fundamentals of pressure regulators (Fisher Governor Co. bulletin, "Essential Elements of Gas Pressure Regulators"). The point is that the regulator manufacturer sizes that breather hole (with the screen in place) so as to give you maximum stability in operation. If anything happens or is done to disturb the breather hole, you may run into whistling or buzzing or one of the other symptoms.

If insects or their nests choke the breather hole, there can be trouble. If you decide to install a regulator inside and vent it outside, the extra fittings and tubing may upset the apple-cart. If you leave the closing cap loose on the regulator, this has the same effect as enlarging the breather hole. Ever notice that when you went to adjust the setting of a regulator, that it buzzed or hummed when you took off the closing cap?

Salvage Pays Dividends

Naturally you can't keep "Mr. Chips" out every time. There is going to be regulator trouble even in the best regulated families. Once this is recognized, the thing to do is to minimize the expense and trouble which ensues. Walk into your own back room. Is there an old barrel there with several old regulators in it?

Get these old regulators out. Write to the manufacturer. Give him size, type number, general description and any other data you can. Consult his catalog and let him know just exactly what you have on hand. Tell him to send you repair parts sheets so that you can order any parts you may need to rebuild this equipment. Get the parts. Repair the regulator and put it back into service. Throw out the old barrel in the back room and put some extra money in your pocket.

So, You Don't Know How?

All right then; we'll do our best to help you. Pick out the best mechanic in your crew, and designate him "Instrument and Control Man." It'll take him only a few hours to become a dependable regulator repair man. As easy as it is, it is important.

In order to make the actual repair,

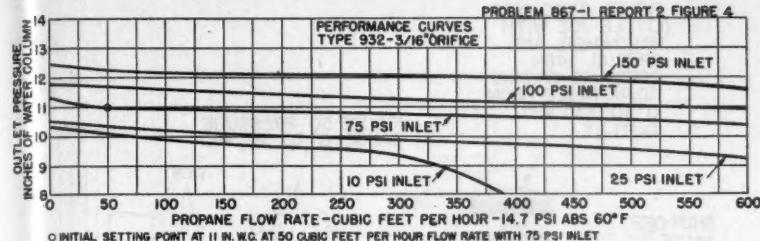


Fig. 5.

all he needs is a small crescent wrench, a screw driver, some repair parts and a torn-down regulator. What takes a little more time and trouble is the equipment required to find out if the repair job was completely successful and if the regulator is ready to go out again on the job. This equipment is called the "Setting and Testing Rack." With it you can put the regulator through the same paces the regulator manufacturer does before he ships it to you. You know, of course, that the manufacturer individually inspects, sets, examines and tests each and every regulator before he ships it to you?

In the long run, it will pay dividends to find out why the service man had to replace a regulator. You will get more careful reports out of the service man, and he will do a more intelligent job at the installation if he knows that somebody is concerned about what actually went wrong. And your repair man can also do a more intelligent repair job. It will take only a moment or so to detect such things as "poor lockup," "stopped up breather vent," "bad threads," "dirt in the inlet," "insufficient capacity," "cracked casting," "leaking at the flange," "relief valve won't reseat," etc. You can do all this on the setting and testing rack and by ordinary examination.

Actual Repair Is Easy

1. Put on rack and test to analyze difficulty.
2. Clean off the outside dirt.
3. Take the regulator apart after determining whether inlet adaptor is installed with right-or-left-hand threads (they come both ways).
4. If the regulator is only a year or so old and your preliminary examination has indicated only dirt on the disc, your only replacement part will be the disc holder assembly.
5. If the regulator has been in serv-

ice for some time or other damage has occurred, replace the disc holder assembly, the diaphragm and any worn or damaged parts with new ones. (Don't waste time trying to repair discs, orifices or relief valve seats—put in new.)

6. Wash castings and other parts which may be dirty with a nonflammable cleaning fluid and allow to dry. (Don't waste time trying to salvage badly corroded parts—put in new.)

7. Put the regulator back together, being careful to observe the rule for putting the proper slack in the diaphragm as described in a previous illustration.

8. Set and test the regulator.

9. Put heavy tape over inlet and outlet to keep out dirt.

10. Store it in a clean, dry place until you need it on the job.

The reason we say to always replace the disc holder, and—if the regulator has seen considerable service, the diaphragm—is that these are the only items needed in 95% of the cases to give you a "good-as-new" regulator.

Your next question may be, "If it is that simple, why does the manufacturer charge such outrageous prices for repairing a regulator?" Well, the manufacturer usually loses his shirt repairing a regulator. This is because he is set up on a high volume production line basis to build new regulators at the lowest possible price commensurate with top quality. Whenever he departs from routine operations, the overhead eats him up. You are a very critical customer, and the manufacturer must take the regulator completely apart and clean each part of it until it is like new (this is perhaps the biggest headache). This doesn't make the regulator work any better and you probably won't do it in your own shop, but you do expect it of the manufacturer. Then when repairs are completed, a brand new production-line paint job has to be applied and the regulator performance certified just like a new unit. This just can't be done as cheaply in a factory as it can be done in your own shop.

How to Set and Test

To begin with, we think repair work should be done with air rather than gas. When you are setting and testing regulators, you want your repair work to be done in a clean, warm workroom. So use air if at all possible. You need an air compressor for paint spraying anyway. The first thing to do is to "set the regulator" at 11-in. W.C. You do this by adjusting the main spring in the spring bonnet. But it must be done under certain specified conditions.

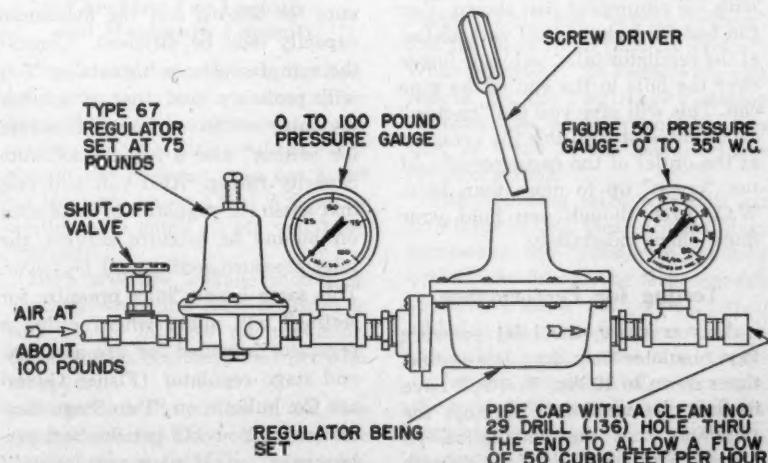


Fig. 6.

The Specified Conditions

Take a look at the catalog page on an L. P. gas regulator. You'll find a graph similar to that shown in Fig. 5.

Notice the words, "Initial setting point at 11-in. W.C. at 50 cu. ft. per hour flow rate with 75 psi inlet." The significance of this is that the outlet pressure of a regulator will change with the rate of flow and with the inlet pressure (see Fisher Governor Co. bulletin, "Essential Elements of a Gas Pressure Regulator"). Since this is the case, the regulator should be set at 11-in. W.C. for the conditions under which it will operate most of the time. Then, when inlet pressure changes and the flow rate changes the "setting" will not drift too far one way or the other.

On propane service, the inlet pressure will vary with temperature all the way from 10 lbs. to 225 lbs., with most of the work being done with an inlet pressure of about 75 lbs. Thus, this particular regulator should be "set" with an inlet pressure of 75 lbs. Further, this particular regulator will be used on jobs where the flow may vary from nothing up to 300 or more cu. ft. per hour. Probably most of it will be done at around 50 cu. ft. Thus, the 50 cu. ft. per hour flow rate when setting at 11-in. W.C.

Fig. 6 shows the equipment required to set the regulator at 11 in. When you have set the regulator under "certain specified conditions," put the closing cap back on and leave it there. The regulator must perform from here on out without any further adjustment. The rest of it is "testing."

You could do part of the testing with the equipment just shown. You can test for lockup. Still with 75 lbs. at the regulator inlet, put your finger over the hole in the end of the pipe cap. This will give you the "no-flow" condition, and with this the pressure at the outlet of the regulator should not "creep" up to more than 12-in. W.C., even though you hold your finger there indefinitely.

Testing for Performance

As you know, the inlet pressure to a regulator may drop low—sometimes down to 10 lbs. You still have to flow the maximum through the regulator that the installation requires. You can check for this with the equipment shown in Fig. 6. You

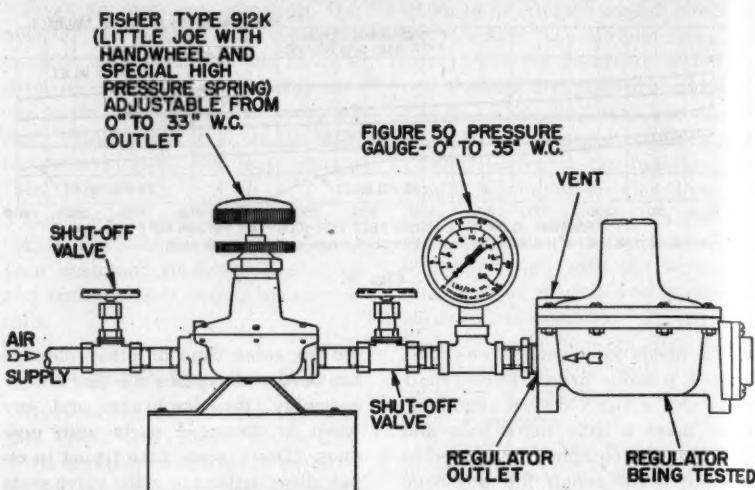


Fig. 7.

will need a new pipe cap with a different sized hole (if you didn't foresee this and make up a tee with two openings plugged and drilled)—a larger hole that will flow maybe 300 cu. ft. per hour. This would be a 17/64-in. drill size hole—as shown by the table which follows shortly. Put the new pipe cap on and change the setting of the Type 67 until only 10 lbs. shows up on the 0 to 100 lb. gauge. Now take a look at the low pressure test gauge. The low pressure should not fall below 9-in. W.C. if the regulator is right. Is it registering above 9-in. W.C.? If it isn't, you've got a bad actor which needs further attention.

Specifications Vary

While the 11-in. W.C. is standard, the other specifications are not. The flow rate for setting, the inlet pressure for setting, and the maximum capacity may be different. Consult the manufacturer or his catalog. You will probably find that a smaller regulator will have a lower "flow rate for setting" and a lower maximum capacity rating. Also you will find that when the regulator is to be used on butane or mixture service, the inlet pressure setting will be lower. This same lower "inlet pressure for setting" will apply when setting a regulator intended for use as a second stage regulator (Fisher Governor Co. bulletin on "Two Stage Regulation"). You will get the best performance out of your regulators if you will test and set them according

to manufacturer's specifications for the service involved.

More Testing to Do

We have gone through the following preliminary steps:

1. We have set the regulator at 11-in. W.C. with the proper inlet setting pressure for propane service—single stage.

2. We have tested the ability of the regulator to "lockup" with a high inlet pressure.

3. We have checked the ability of the regulator to maintain at least 9-in. W.C. outlet even when the inlet pressure has been dropped down to only 10 lbs. and the flow has been increased to maximum.

But we have more testing to do before the job is completed:

4. Check for leakage.
5. Determine if relief valve is in proper operating condition.

As far as leakage goes, it can be tested for by means of soap-suds. Test any part or joint subjected to high pressure in service when you have high pressure on during the testing procedure. The same way for low pressure parts or joints. It is different with the relief valve, however, since you must have some means of putting a false high pressure in under the diaphragm in order to cause the relief valve to open. The best way to do this is through the outlet, as shown in Fig. 7.

First, increase the outlet pressure setting of the Type 912K until air begins to discharge from the vent on

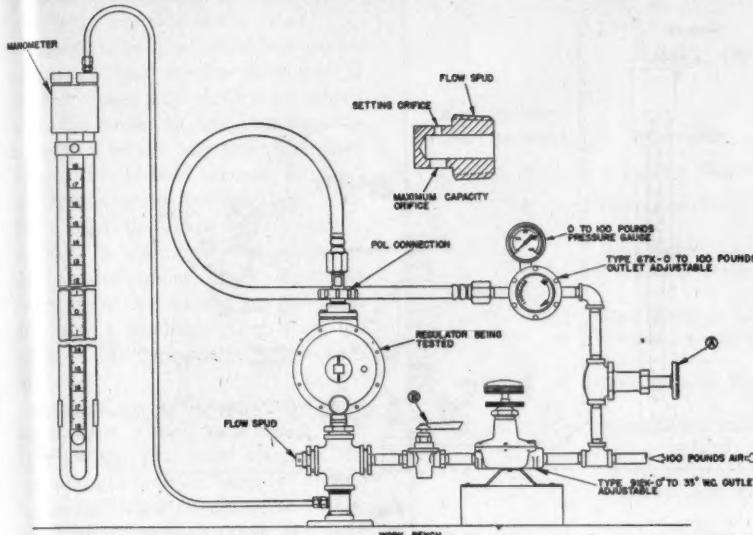


Fig. 8.

the regulator being tested. This will give the relief valve setting. If everything goes well, it will be somewhere between 22-in. and 33-in. W.C. Then open up the shutoff valve between the 912K and the pressure gauge and bleed the pressure down to slightly below 22-in. W.C. Now check the vent on the regulator being tested. No air coming out? Good! Your job is done. Paint the regulator if you are the neat type—but keep that paint out of the breather opening and the inlet and outlet connections, especially the breather opening.

Then store the regulator in a clean, dry place until you need it for an installation.

Build Better Equipment

The chances are that you will want something a little more permanent for your work and repair bench. Some of the various parts of the two different sets of setting and testing equipment previously shown can serve both purposes. You can get as fancy as you want to, including pneumatically operated connections for clamping the regulator in place and time signals for lockup test, etc., but Fig. 8 shows a unit you can either buy or build yourself.

Here is what you can do with this outfit and how you do it: First, set the regulator at 11-in. W.C. with the proper "inlet setting pressure" and the proper "setting rate of flow." Then, connect in the regulator to be tested. You will probably need some

adaptors to accommodate the various inlet and outlet connections on the various regulators.

Now, select a "flow spud" which has the proper size drillings to measure flow rate and maximum flow. Install this flow spud at the point indicated.

Then, with valve "B" closed, open valve "A" and turn the handwheel on the Type 67K regulator until the pressure gauge reads the proper setting pressure.

Next, cover the maximum capacity orifice on the flow spud with your finger and adjust the spring in the regulator being tested until you read 11-in. W.C. on the manometer.

Put the closing cap back on the regulator and leave it there.

Checking For Lockup and Maximum Capacity

Cover both the orifices in the flow spud with your finger so that there is no flow at all. Next, watch the manometer for a little while to make certain the pressure does not build up to above about 12-in. W.C. If it continues to climb slowly you have "creepitis."

High pressure leakage should be checked while the high pressure is still on the inlet to the regulator. Check for leaks around the inlet with soapsuds.

Leave both the orifices in the flow spud uncovered. By turning the handwheel on the 67K, reduce the inlet pressure to the regulator being

tested until it is only 10 lbs. Now, read the manometer. If it is above 9-in. W.C., everything is okay.

Check Relief Valve

First, close valve "A" and open valve "B." Next, cover both the orifices in the flow spud. Now, turn the handwheel on the Type 912K until air begins to come out of the vent on the regulator being tested. A glance at the manometer will tell you if the setting is between the 22-in. and 33-in. requirement.

Check Reseating

First, back off setting of Type 912K and then uncover the orifices on the flow spud gradually until the air no longer comes out the relief valve vent on the regulator being tested. If the manometer reads something more than 20-in. W.C. the relief valve has reseated.

Low Pressure Leaks

Check flange and any low pressure joints with soapsuds—or, if all of your connections in your test equipment are perfectly leakproof so as not to fool you with a leak which is not in the regulator at all, you can test this way:

First, disconnect from the inlet of the regulator. Then, cover both orifices in the flow spud. Finally, close valve "B" and watch the manometer. If the pressure falls, then there is a leak. Be sure it isn't in the test equipment or you'll be looking for something that isn't there.

Making Flow Spuds

Take a plain old pipe plug with a square wrenching section on the head. Drill the inside down a little deeper. Drill the "setting orifices" and the "maximum capacity orifice." What size holes? To begin with, you should get the regulator catalog showing the regulator you want to test, or write to the manufacturer for information.

The following table will tell you how large to drill those orifices. Just remember, the "maximum capacity orifice" should only be large enough to flow enough gas, which, when added to the gas coming out the "setting orifice", equals the rated capacity of the regulator. For example, the manufacturer tells you that the regulator has a capacity of 300 cu. ft. per hour. He tells you to set it with a flow of 50 cu. ft. per hour.

Thus, the setting orifice should be a No. 29 drill and the maximum setting orifice a 17/64-in. drill which will pass 250 cu. ft. per hour. Remember, you left both holes uncovered when testing for maximum capacity?

Use a Drill

This Size	To Get This Much Flow Cfh
No. 45	20
No. 37	30
No. 31	40
No. 29	50
No. 26	60
No. 24	70
No. 18	80
No. 15	90
11/64-in.	100
7/32-in.	150
1/4-in.	200
17/64-in.	250
5/16-in.	300
11/32-in.	350

At 11-in. water column.

You Need a Manometer

Buy a manometer which will read 50-in. water column. Sure, they cost money, but they are valuable pieces of equipment. Of course, if you are handy, you might build one which will do a good job even though it will look like you built it. Take a piece of clear plastic or glass tubing 100 in. long and bend it in the form of a "U." Fasten it to a piece of one-by-three or a piece of plywood. Take a narrow strip of slick cardboard and mark off lines every inch and number them from zero to 20 both ways from the center. Fasten this strip of cardboard on the manometer board between the two legs of the "U" so that the zero mark is about halfway between the top and bottom of the manometer. Fill the manometer with water until the water level is near the zero point. Connect up the tubing to one leg of the manometer and you're ready to do business.

A little refinement can save you trying to pour water to exact zero level. (This isn't essential, anyway.) Put slots in each end of the cardboard strip so that you can slide the strip up or down a little ways to compensate for some over-filling or under-filling.

This will give you a good accurate manometer. When you put an inch of pressure into a manometer, one leg moves up a half-inch and the other moves down a half-inch. The total water movement is an inch, but each leg only moves a half-inch for each inch of pressure. Thus, the total

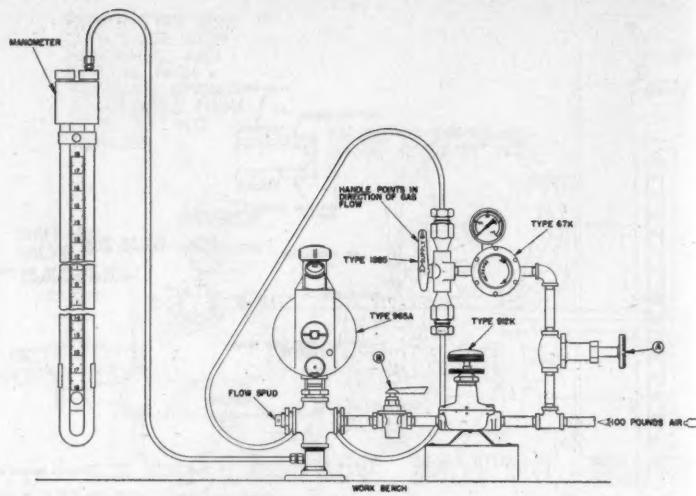


Fig. 9.

pressure is the sum of the readings of both legs.

Testing Automatics, Check Tees and Manual Changeovers

If you have been through all the agony of reading what has gone before, you can probably test any regulator made with your eyes shut. At the same time, you may want to check a little on how someone else would test a regulator which has

two inlet connections—like an "automatic," for instance.

You are going to need another piece of gear. This will be one which will allow you to put pressure into both inlets of the regulator being tested. A suggested arrangement is shown in Fig. 9.

In this arrangement, a Fisher Type 1885 manual changeover manifold, the same as that used on many L. P. gas installations, has been employed

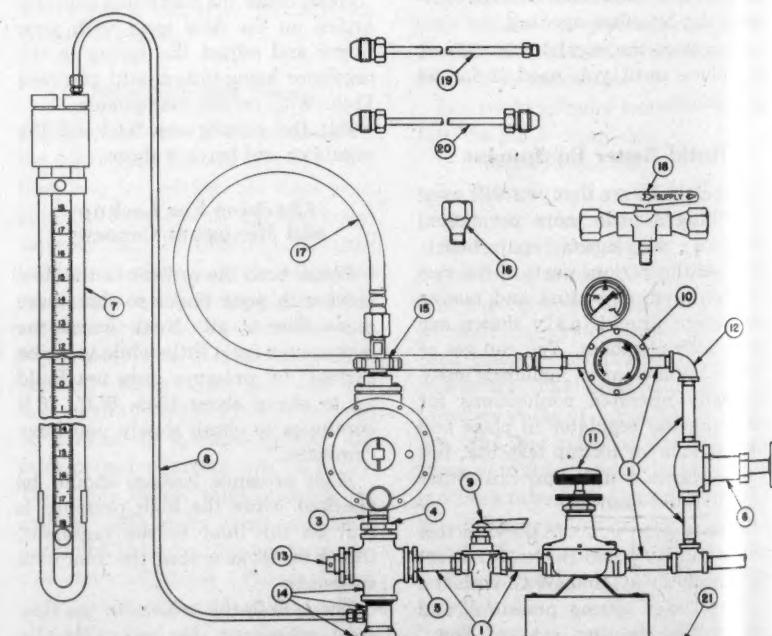


Fig. 10.
(Corresponding chart on next page)

to permit switching the inlet pressure from one side to the other.

The same general procedure previously described applies here too. It doesn't make any difference which way the knob on the automatic is turned or which way the valve handle on the 1885 is turned. Just set the regulator to deliver 11-in. W.C. Then turn the knob on the "automatic." It shouldn't change more than a half-inch, either direction. Then turn the handle on the 1885 and take a reading. Next, turn the knob on the "automatic" and take a reading.

None of the readings should vary more than a half-inch away from 11-in. W.C. You have checked the operation of both on "supply" and on "reserve." After checking for lockup and high pressure leakage, test both sides of the "automatic" again under "supply" and "reserve" settings with the lower inlet pressure and the higher flow. No reading should be accepted under 9-in. W.C. When testing slug check changeovers and manual changeovers, the procedure will be similar but not so complicated.

If you just absolutely can't get air to do your testing and want to do it with gas, your problem is complicated a lot. You can't just cover the drill holes in flow spuds with your fingers. You must build up a manifold with shutoff valves and orifices so that you can vent all the gas to a safe place. And remember! You may be venting 200 or 300 cu. ft. of gas per hour—at least for a few minutes—so be careful.

A Few Final Tips

Some of the parts of the regulator testing outfit just shown are easy to get. Some of them from your own fitting stock. Some from your local hardware store. But some of them must be ordered from the manufacturer of such special equipment. Fig. 10 shows a detail drawing and is accompanied by a "bill of materials," with suggested sources.

In closing, remember the industry is getting older. Maintenance becomes of more importance. Obsolescence begins to operate. Don't let a good regulator that can be repaired stand idle. But don't try to keep repairing a regulator that was obsolete 10 years ago. You'll save money by throwing it away and putting in a new up-to-date regulator.

BILL OF MATERIALS

Key No.	Number Required	Description	Obtain from
1	7	1/4-in. Pipe Nipples.	Locally.
2	1	1/4-in. Pipe Tees.	Locally.
3		Pipe Nipples for various size regulator outlets.	Locally.
4		Pipe Bushings for various size regulator outlets.	Locally.
5	1	1/4-in. x 3/4-in. Pipe Bushing.	Locally.
6	1	1/4-in. Globe Valve.	Locally.
7	1	Manometer capable of measuring up to 40-in. W.C.	Meriam Instrument Co. or fabricate yourself.
8	1	Copper Tubing or Rubber Hose.	Locally.
9	1	1/4-in. Plug Cock, Imperial No. 104-H0.	Imperial or locally.
10	1	Fisher 67TCK with 0 to 100 spring and 0 to 100 gauge.	Fisher Governor Co., Marshalltown, Iowa.
11	1	Fisher 912KY with 0 to 35-in. W.C. spring and mounting bracket. 1/4-in. x 1/4-in. Body Tappings.	Fisher Governor Co.
12	1	1/4-in. Elbow.	Locally.
13		Flow Spuds, 1/2-in. thread.	Fabricate yourself, or Fisher Governor Co., specifying drill sizes or flow capacities of drilled holes.
14	1	3/4-in. Special Cross and Support.	Fabricate yourself, or Fisher Governor Co.
15	1	Handwheel POL Adaptor with soft nose Fisher No. AB3079.	Fisher Governor Co.
16		POL x Male Pipe Adaptor POL x 1/4-in. Fisher No. 1B5852 POL x 3/8-in. Fisher No. 1B5808 POL x 1/2-in. Fisher No. 1B5801 POL x 3/4-in. Fisher No. 1B5851	Fisher Governor Co.
17	1	High Pressure Hose, 1/4-in. male x 1/4-in. female connectors, Fisher No. DX150D5.	Locally, or Fisher Governor Co.
18	1	Manual Throwover, Fisher No. 1885.	Fisher Governor Co.
19	2	POL x inverted flare pigtail, Fisher No. 1B2923.	Fisher Governor Co.
20	2	POL x POL pigtail, Fisher No. 1A8935.	Fisher Governor Co.
21	1	Clean, well lighted work bench in comfortable room.	You should already have one.

Hauling Propane Along the Eastern Seaboard

•

By C. W. Rosencrans

Vice President and Secretary
H. R. Ritter Trucking Co., Inc.
Paramus, N. J.

**Large Transport
Firm Carries Vital
LPG to Thousands
of Users Through
Winter Storms
and Summer
Traffic With Safety
For Its Men
and Equipment**



Air view of Ritter LPG transport fleet and garage terminal located at Paramus, N. J.

HAULING liquefied petroleum gas by transport over the highways of East Coast states is a major operation. In summer the roads are crowded with tourists, in addition to the normal traffic, and when winter comes there are snow and sleet and rain storms to make all driving hazardous, especially tractor-trailer units carrying thousands of gallons of propane. Accidents, if they were to happen, would result in large monetary loss besides whatever personal injury might occur.

Even the main highways are too narrow to carry today's traffic, while the side roads are often scarcely wide enough for two vehicles to pass; they wind through the hills, with many grades, and interrupted with bridges even more difficult to maneuver.

But L. P. gas must get through from the big central bulk plants to the distributor-dealers who, in turn, supply the vital fuel to consumers for their important household services—for cooking, hot water heating, refrigeration and house heating.

Supplanting coal and oil and electricity in so many rural areas, liquefied petroleum gas has become as important to the lives of country and small town dwellers as piped gas is in the large cities.

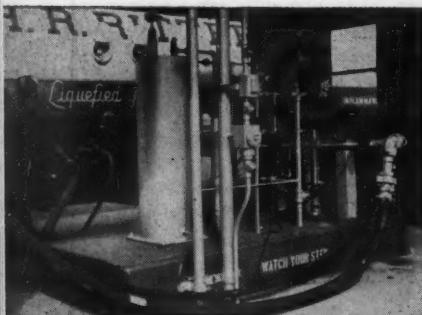
This is the story of problems involved and safety precautions established by one firm which undertakes to supply the needs of thousands of gas users along the Atlantic Seaboard.

The firm is H. R. Ritter Trucking

Co., Inc., with headquarters office and terminal covering three acres in Paramus, N. J., which possibly has the largest independently owned and operated fleet of LPG transports east of the Mississippi, or even in the entire country. It has developed a huge business in sending out its trucks and trailer units over the highways of 11 states from Maryland and Delaware to New England.

In the modern fleet of over 65 pieces of trailerized equipment Ritter has a total of 27 semi-trailer pressure tank units used only for LPG hauling and one pressure tank unit also used for this purpose. The first of these units was purchased and put into operation in 1947, and they have capacities of from 4000 to 5800 gallons each of product. The pressure tanks are of two types of construction; one is the single barrel, the other the "twin", or double barrel type. These tanks are of MC-330 specifications welded and annealed to exacting particulars. Each unit carries its own safety inspection certificate and calibration charts which can be checked by the customer whenever he deems necessary.

Each one is powered by Brockway 260 tractors equipped with Eaton 2-speed axles. Each tractor has its own specially constructed power take-off pump (designed expressly for pumping LPG) that is capable of discharging up to 100 gallons per minute. We have both single and dual axle trailers to enable us to meet the weight re-



Ritter transport loads at Warren Petroleum Co. plant, Newark, N. J.

quirements of the various states through and into which we operate.

One of the greatest safety factors which we have on the propane units is the system of valves used in connection with the loading and unloading of LPG. The internal valves are operated by a hydraulic system. As an added safety factor there are emergency valves which, when opened, will automatically close the internal valve in the tank. All discharge lines are equipped with excess flow valves. These valves will automatically close when the rate of flow increases for any reason such as when a hose breaks or some other mechanical failure in the system causes the material to flow faster than normal.

Systematic Loading

Our operators follow a set routine for loading and unloading. This is as follows: setting all brakes, choking the wheels, connecting static ground straps. Fire extinguishers are removed from the unit and placed in a spot for immediate use. After all lines are connected, there is a routine double check. This is accomplished by the operator and loading personnel of the plant at which the truck is located. We compute the amount of product loaded by the use of a rotary dip tube gauge. After the unloading operation is completed ALL valves are closed and lines are bled of pressure. Before any lines are disconnected, another double check is made by the driver and unloading personnel of the plant.

The importance of the loading and unloading operation, as well as safety on the highway, is stressed at periodic safety meetings supervised by one of our officers. We impress upon our drivers that they are our representatives on the highway and that courtesy and safety is the best way of winning and keeping the good will and high esteem of the public, upon whom our service is dependent. In connection with the program, the drivers are instructed to operate vehicles at moderate speeds at all times to uphold our motto of "Safe, Clean Service." During 1952 our fleet of units traveled a total of more than 2½ million miles, with an expected 3 million miles during 1953.

The H. R. Ritter Trucking Co. was founded in 1927 by Herbert R. Ritter, who actively heads the company as

president and treasurer. Many will recall those days as the era of 25-miles-per-hour travel on the not-so-smooth riding, solid rubber tires. Mr. Ritter, as well as the writer, can vividly remember the days when tank transport by motor truck was in its infancy and when a 2000-gallon unit was considered enormous. Pioneering in the petroleum transport industry meant driving your own trucks, repairing and overhauling motors on a short week-end, and sometimes tossing a coin to see who would be the lucky one to go home for a few hours sleep before going on another long day's run. It is from personal experience such as this that the H. R. Ritter Trucking Co. has been able to keep abreast with the ever-growing petroleum industry, and has been successful in satisfying its cus-

the Newark and New York harbor area, we have recently opened a terminal in Fairfield, Conn., which is very close to the Bridgeport industrial area. This enables us to give better service to the New England area as well as enabling us to reduce repair costs on our equipment. Shortly before the New Jersey Turnpike was completed, we also obtained property bordering the Turnpike located in the heart of the Carteret-Sewaren refinery group. Upon completion of this terminal we will be able to serve our customers and the public even more satisfactorily.

We employ approximately 125 people. In addition to our driving personnel we have an efficient office force headed by our assistant secretary, Mr. E. A. Bender. The traffic department, headed by Mr. A. R. Jeltes,



Ritter transport delivers load of LPG to Suburban Gas Co. bulk plant at Mahwah, N. J.

tomers and the public with a safe, clean, and fast transport service.

To maintain our ideals and principles of service, we take great pride in our driving personnel and employ experienced men of highest calibre. The drivers of our equipment are entrusted with a very expensive and delicate piece of equipment and are given a considerable amount of schooling in all phases of our operations, with the greatest emphasis placed on highway and materials handling safety. New propane truck drivers are given "on-the-job-training" by riding with experienced men on all types of runs and thus learning first hand the steps and precautions necessary for the loading and unloading of the product.

In addition to our main terminal at Paramus, 10 miles from the heart of

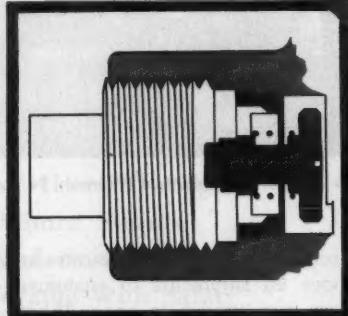
is ready at all times to give rates and advice on shipments to customers. Since our service is on a 24-hour basis, we employ a group of six dispatchers, with Mr. Jack C. Morley as chief, to route the trucks and expedite the movements as quickly and safely as is humanly possible. Our customer relations and liaison work is taken care of by Mr. J. Edward Boyle.

To properly maintain our trucks, the mechanical division under the supervision of Mr. L. Genitempo is charged with periodic inspections of all vehicles, safety equipment, tires and pipe lines. A most valuable feature of this inspection is that we send samples of the crankcase oil taken out of each tractor to a testing laboratory at certain intervals where it is

(Continued on page 161)

Now!... REGO MULTI VALVES

RegO No. 2594
Series Multivalves



Outlet for liquid withdrawal
with internal excess flow
valve and removable brass
plug.



PIONEER AND LEADER IN THE DESIGN AND
MANUFACTURE OF PRECISION EQUIPMENT
FOR USING AND CONTROLLING LP GASES

With Extra Liquid Outage Connection

For Fast, Safe Filling of Tractors and Other Mobile Tanks from Stationary LP-Gas Bulk Systems

In addition to all of the proven features of RegO Multivalve design, this new series of valves has a $\frac{3}{4}$ " female pipe thread outlet to provide for liquid withdrawal. This outlet is protected by a positive action internal excess flow valve. The outlet is plugged with a removable $\frac{3}{4}$ " brass pipe plug when shipment is made from the factory.

ELIMINATES EXTRA LIQUID WITHDRAWAL TANK OPENING

RegO No. 2594 Series Multivalves provide in a single assembly, with a single $1\frac{1}{2}$ " tank opening, these operating and safety features:

- Service Outlet Valve . . . Double Check Filler Valve
- . . . Vapor Return and Excess Flow Valve . . .
- Fixed Liquid Level Gauge . . . Optional Pressure Gauge . . . Optional Fuse Plug . . . Plus, Liquid Withdrawal Outlet with Internal Excess Flow Valve

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4201 W. Peterson Ave., Chicago 30, Illinois



Can the Vapor Pump Save Your Plant Money?

By Robert C. Angell

Vertical Compressor Division
Worthington Corporation
Holyoke, Massachusetts

THE use of highly volatile liquids such as propane, anhydrous ammonia, sulphur dioxide, methyl chloride or freon in a variety of industries has brought with it new problems of liquid transfer which are not normally encountered in pumping applications.

In the normal transfer of ordinary liquids, we consider such things as rate of flow needed (suction pressure, discharge pressure), the additional pressure which must be required to overcome static elevation and pipe friction, corrosive action of the liquid upon the pump, the viscosities of the liquid over its pumping range, and the positive head available to push the liquid into the pump.

Generally with proper consideration given to these factors, a rotary, centrifugal, power pump or some conventional type pump can be applied for successful transfer. But in the case of volatile liquids with high vapor pressures, an entirely new means of transferring such liquids must be considered for the most economical and wisest operation so as to achieve removal of valuable residual gases remaining after the liquid is removed.

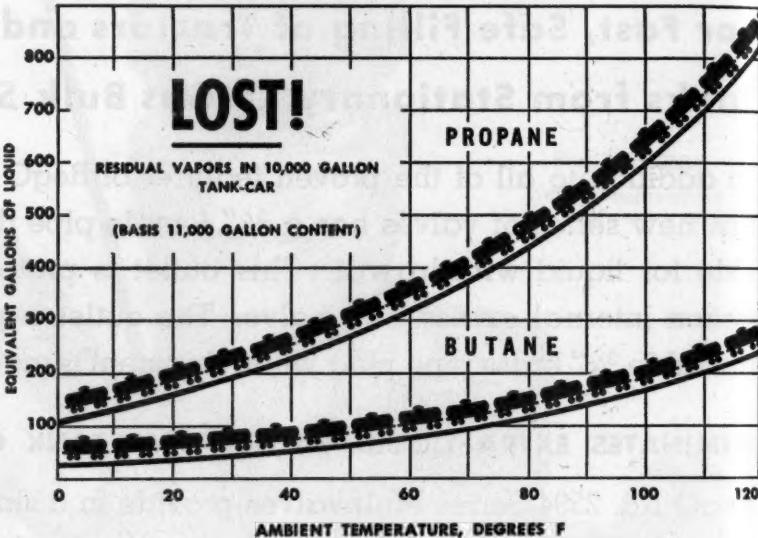


Fig. 1.

As a case in point, for some manufacturing processes, tank car quantities of anhydrous ammonia are used as an intermediate for a wide variety of compounds such as amines, nitrates, nitric acid and ammonia salts. Complete liquid removal was effected using conventional pumps, but it was found that residual vapors were being left in the tank car and being returned to the anhydrous ammonia manufacturers. The weight of these vapors depends on the ambient temperature as shown in Fig. 1. This represented a net loss to the chemical company on a warm summer day amounting to the cost of 1035 pounds of ammonia plus transportation charges to the plant.

To eliminate this company's financial loss in residual vapor return and accomplish other pumping advantages, the vapor pump was installed in place of a liquid pump. Immediate results in better operation and prod-

uct cost saving shows that the unit paid for itself within a year and a half. It is rather obvious how this saving accumulated in such a short period when we consider the price of ammonia to be about \$115 per lb., and the average cost of a vapor transfer unit as under \$1000.

Operating Principle

Most technical persons are familiar with the operating principles of liquid pumps, but the vapor pump is another matter entirely. Visualize a tank car full of propane marked on a plant siding ready to be unloaded into tanks for storage preparatory for its use as a fuel (see Fig. 2). Both tank car and storage tank are normally under approximately the same vapor pressure for propane as high as 173 psig on a hot day.

A pipe connection is made between the tops of the tank car and the storage tank, and a similar connection is

made between the bottoms of the two tanks. As the connections are opened, the liquid will seek its own level and then flow ceases. However, by creating a pressure in the tank car which is high enough to overcome pipe friction and any static elevation difference between tanks, all the liquid is forced into the storage tank in short order. The vapor pump does this job.

On starting, the vapor pump, connected directly into the vapor line, sucks propane gas from the storage

FIELDS OF USE

Successful application of vapor pumps to the transfer of hydrocarbonous liquids such as propane and butane is found in wide use. Freedom from vapor locking plus the inherent ability of the vapor pump to pay for itself by the removal of residual vapors has made this application almost universally accepted for liquid petroleum transfer.

The same properties of the vapor pump which make it fit for liquid

(2) The vapor being handled by the vapor pump must not be injurious to cast iron or steel which are the usual materials of construction.

(3) Minute quantities of oil which the reciprocating compressor of the vapor pump will introduce into vapor should not be harmful to the vapor or the process in which it is to be used. In all but the most exacting processes, the quantity of oil absorbed is not large enough to be a detrimental factor.

DESIGN AND FEATURES

In the selection and purchase of a vapor pump unit, one will find several complete packaged units available which require only wiring and piping connections.

The booster compressor, generally of the single stage style, must be designed to handle gases without leaking, and a minimum of gaskets and the use of mechanical shaft seals are therefore important compressor design considerations.

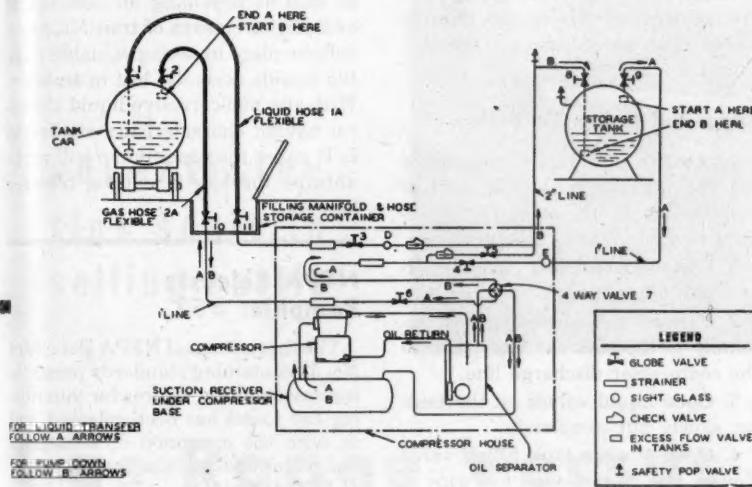


Fig. 2.

tank and discharges it into the top of the tank car, effecting a lowering of the storage tank pressure and an increase in the tank car pressure. All liquid is forced out of the tank car through the liquid transfer line.

To remove remaining residual propane vapors, piping connections are reversed by means of a four-way valve, and the direction of flow through the vapor pump is reversed. The gas is now drawn from the top of the tank car and discharged through the vapor line into the storage tank. When the pressure falls to about 20 psig in the tank car, the vapor pump is stopped and the car returned to its source virtually empty of liquid and gas. Removing remaining vapor is economically infeasible. The total time for this operation on a tank car of 11,000 gals. is about two hours for liquid removal and four hours for vapor removal.

petroleum applications have, within the last few years, fitted it for transfer of anhydrous ammonia. This use is briefly found in western and southern areas of the United States where application of liquid anhydrous ammonia to the soil is used as a method of supplying nitrogen directly to plant roots.

While the most popular use of vapor pumps is for transferring the liquids mentioned, other volatile liquids undoubtedly lend themselves to this type of pumping. In general, the following guides should be used in deciding whether or not a vapor pump is suited for a particular application.

(1) The vapor pressure of the liquid must be equal to or greater than butane. The greater the vapor pressure, the more gas will be reclaimed by the use of the vapor pump.

A large surge tank, capable of trapping any liquid condensation which may form in the vapor line is essential. Otherwise this liquid is drawn into the compressor, causing serious damage. This is a particularly important point in areas subject to changing temperatures. An ASME code tank of 15 gals. is ample protection.

An oil separator to insure minimum contamination of the product is generally included. Oil is normally returned automatically to the compressor crankcase from the separator. In the case of L. P. gas, this separator is a must, as the great affinity for oil which these gases have would cause the crankcase to be depleted at a rate which would necessitate constant attention.

A crankcase oil changing system will allow complete refilling or adding of oil to the compressor at any time during the unloading cycle without venting the compressor.

Relief valves and gauges for discharge and suction will give protection to the unit.

High starting torque motors are generally used so that compressor unloading is unnecessary when starting.

All pipe, valves, and fittings should

be of extra heavy ASA schedule 80 to withstand the high pressure.

Electrical equipment should be selected according to the class of liquid being handled. Group I, Class D explosion proof equipment should be used for gases such as propane and butane, and chemical inert motors, where vapors may attack motor windings.

General Operation and Maintenance

For proper operation and minimum unloading time always locate the compressor unit as near as possible to the tank car. In cold weather applications or in long compressor discharge vapor lines where it is possible that the heat of compression which was added to the gas by the compressor could be dissipated, the application of insulation to retain this heat will speed unloading time. This is so because the entrance of the hot gases upon the liquid in the tank car actually serves to heat the contents and thus raises its own vapor pressure to help create the needed pressure differential between tanks.

The discharge vapor line from the compressor should always extend through the liquid level to the bottom of the storage tank so that the warm gases being forced into the tank will be condensed by the cool liquid, and little back pressure will result.

In the pumping of anhydrous ammonia, the use of copper containing alloys should be avoided. Exceptions to this are parts protected by the compressor lubricant such as connecting rods and bearings.

Operation with sulphur dioxide, requires the precaution of preventing moisture from reaching the gas, as corrosive acids will result. Filters and more frequent oil change will prevent this condition.

For most gases, a good refrigerant oil such as would be used in the operation of a Freon 12 compressor will give good service. The general specifications of this oil are as follows:

Straight Mineral Pale Oil	
Specific gravity at 68° F.....	.919
Flash point	400°
Fire point	455°
Viscosity SSU at 100° F.....	515
Viscosity SSU at 210° F.....	55
Pour point	-15°

Ordinary compressor oils or motor

oils may cause excessive frothing and interfere with proper lubrication and oil level reading. With the use of hydrocarbon liquids, this condition bears special watching. A boiler type oil gauge will allow accurate oil level reading.

Normal time for vapor removal can be speeded up if, upon cessation of liquid flow from the tank car, the compressor is still allowed to run and discharge hot gases into the car for about a half an hour. This will allow the heavy cold gases in the car to pass off through the liquid line rather than having to remove them through pumping of the compressor. At the end of this period, normal pump down procedures are then followed.

Suggested Guide To Follow

As a guide to personnel responsible for the unloading of tank cars of volatile liquids, the following procedure may serve as outline to follow:

1. Connect unloading hose to storage tank filling line.
2. Connect the equalizing hose assembly to the tank car vapor and to the compressor discharge line.
3. Open liquid valves on the tank car slowly but completely.
4. Open storage tank filling valve slowly, but do not open too wide if the tank car pressure is much over that of the storage tank. If this is done, the car excess flow valves will close, and it will be necessary to wait until they are heard to drop before unloading can resume.
5. Until pressures between tanks equalize or the tank car drops to within 20 psig of the storage tank, do not start compressor, as sufficient pressure is already present to cause flow.
6. Start compressor with valves in position for flow of vapor from storage tank through the compressor and then into the tank car. Maintain a pressure differential of between 5 to 20 psig to prevent the excess flow valves closing.
7. Determine when all liquid has been removed by cessation of flow in liquid sight glass indicator or by slowly opening the test tube valve on the tank car.

8. After the car has been emptied of all liquid, the valves on the liquid line should be shut in the reverse order from which they were opened.
9. To remove vapors from tank car,

the valves on the vapor line should be set to permit the compressor to pull vapors from the tank and discharge into the storage. The compressor should be stopped when tank car vapor pressure is reduced to about 20 psig and all vapor valves closed.

All local codes and National Board of Fire Underwriter Pamphlet No. 58 should be followed if explosive gases are being transferred.

Summing Up

The vapor pump with its ability to reclaim material normally out of reach with any other type of pump, as well as providing an economical and efficient means of transfer, has a definite place in saving valuable volatile liquids normally lost in transfer. With any non-corrosive liquid chemical having characteristics similar to L. P. gases, the vapor pump will probably be the key in cutting transfer losses.

NFPA Releases Pamphlet #52

The first edition of NFPA Pamphlet No. 52 containing standards prescribing reasonable measures for minimizing fire losses has been released and is, with the exception of section 23 and minor editorial changes, the same as LPGA No. 1.

Copies can be obtained for 50 cents from the NFPA, 60 Batterymarch St., Boston, Mass.

LPG Demand Rise 10.6%

The latest monthly study from the Bureau of Mines reports that demand for LPG rose 10.6% during the first five months of the year as compared to the 1952 level with 51,720,000 bbls. in 1953 with the comparable 46,751,000 of 1952.

Of these totals in 1953, 1,212,000 bbls. were exports and 50,518,000 were domestic use, and in 1952, 980,000 were exports, and 45,771,000 bbls. were domestic use. Production output for the first five months of 1953 was measured at 14,140,000 bbls., somewhat above the 1952 level of 13,589,000 bbls.

Transfers of LPG from natural gasoline in May totaled 6,792,000 bbls. The May 1952 figure was 5,754,000. Totals for the first five months show 1953 transfers at 37,833,000 bbls. or over 4,000,000 bbls. over the 1952 level of 33,247,000.

This brought stocks at the end of May to 881,000 bbls. compared with 714,000 at the end of April.

company to make good business and Co. they have been advertising more and more recently in national publications. This is because it is important to have "something" to sell and, in this case, it is the latest in home equipment.

Gas ranges are more popular than ever. In fact, they are being sold at a rate which is twice as fast as electric ranges. This is due to the fact that gas ranges are more efficient and economical to operate. They also require less maintenance than electric ranges.

advertising tips scale in selling battle



Gas Range Versus Television



"Keeping up with the Joneses" advertising theme in the sales campaign of the Arkansas-Louisiana Gas Co., is a powerful suggestive force in selling, maintains George B. Tyler.

By Zoe Johnson

"KEEPING up with the Joneses" was the camouflaged psychological angle Arkansas-Louisiana Gas Co., northern district, used in its three-month hookup in the national sales campaign for gas ranges. "Something had to be done in this area," says George B. Tyler, new business manager for the Little Rock office, "to break the strangle hold the sale of TV sets had on gas appliances, especially gas ranges."

When television really came to Little Rock with its first station the class of people that spend money most freely for gas appliances almost forgot they had to eat. No matter how badly a new range was needed, the excitement of bringing the entertainment of the whole earth into their homes stopped any thought or intention of the down payment on a new gas range. So, Little Rock's potential gas appliance customers went dancing away to the TV market to the

tune of approximately \$3,000,000 in the first five months of 1953.

In cooperation with the leading national range manufacturers, Arkansas-Louisiana Gas Co. contributed \$15,000 to the campaign kitty to put a new gas range between their customers and their TV screens. Naturally, the effects of this wide publicity was felt directly by the many L. P. gas dealers throughout the same area.

A subtle promotion theme was used editorially by the Little Rock newspapers to supplement the extensive advertising campaign. Prominent families were used in pictures to stress a "keeping up with the Joneses" angle through the use of happy kitchen scenes which featured a late model gas range.

Especially flattering and sales-effective were pictures of mothers relieved from drudgery by their latest miracle ranges which allowed more time for Junior, clubs and social activi-

vities. And the intangible suggestion in all these pictures was that having a TV set in the living room unsupported by a new gas range in the kitchen was as ridiculous as going to a picnic in a formal evening gown.

There were at least ten free feature articles supporting Arkansas-Louisiana's big two-page ad of "Carnival Gas Cooking," and large ads by practically every furniture and appliance dealer in town. All were headed by a picture of a contented family or glamorous house wife thrilled with the ease and perfection of cooking on her new range. Special attention was directed to the people in the decoy pictures by giving their names and street addresses, and even quoting some of them.

One woman was quoted as saying: "My gas range is a delight to use. It is easily the most responsive piece of kitchen equipment I have ever used." Another said: "Our new range is so handsome and our kitchen is so pleasant and comfortable that we even moved an upright piano into our breakfast-room area at one end of the room for family fun." Another

prominent socialite says: "We tried an electric range when we first built our home, but we soon decided to replace it with a gas range. Our unusually large kitchen is the favorite room in our house, and our large gas range is the answer to every meal problem."

In these special feature articles every kind of range and oven was pictured and commented upon from the shoulder high ovens to the dutch ovens. No convenience of gas cooking was overlooked. No angle to flatter the subject was left out.

"The power of thought and suggestion, the most powerful force in the world, paid off," said Mr. Tyler. "Up to now, we've sold 1,800 ranges as a result of this promotion, and the campaign isn't over. Business has jumped from 10% to 50% for some dealers and there's another big ad to run. We sure slipped a lot of new gas ranges in front of the TV screens."

Al Pollard of the Brooks-Pollard Advertising Agency, who handles advertising for Arkansas-Louisiana, says the campaign has produced a big sales increase, much greater than expected.

Mr. Tyler maintains that any idea planting the suggestion of "keeping up with the Joneses" is a sure-fire sales producer and one that can be applied to any kind of sale campaign. Sales based on some angle of this suggestion probably would be even more successful in small towns. This "not-to-be-outdone" trait of human nature forces progress and keeps factories running full time.

In all there were 19 national manufacturers represented in the "Carnival of Gas Cooking" throughout the 27 counties served by Arkansas-Louisiana Gas Co., and it is estimated that the advertising reached 200,000 potential customers and possibly as many more prospects for LPG appliances.

Mr. Tyler feels that the final sales results from the three months promotion will be the most successful in Arkansas-Louisiana Gas Co.'s history in gas appliance sales. At the lowest estimate, 2000 new modern gas ranges will be pushed in front of the TV screens which were strangling appliance sales.

Review of Changes Made In Pamphlet 58

A revised edition of Pamphlet 58, "Standards for the Storage and Handling of Liquefied Petroleum Gases," has been released by NFPA, superseding all prior editions.

The new edition, which incorporates the amendments adopted at the 57th annual meeting of the association held recently in Chicago, has been analyzed by Chris F. Neely, LPGA staff engineer, and found to involve the following major changes:

Basic Rules

B.5 - (h) (i) (j)

These three new paragraphs give the regulations for spacing and location of L. P. gas containers with respect to flammable liquid tanks.

B.5 - (a)

As revised, ICC cylinders with a maximum of 12 lbs. water capacity temporarily used for demonstration purposes may be located inside of buildings.

B.9 - (b)

Under the heading "minimum" the figure "90%" has been changed to "88%" in each of three entries.

Division 1

1.1 - (b)

The word "minimum" has been deleted.

1.5 - (b)

This section has been amended to agree with the ICC containers used for demonstration purposes mentioned in section B.5 (a).

Division 2

2.6 - (i)

This new paragraph deals with interconnections of permanently installed containers and the safety standards necessary to avoid damages due to expansion, contraction, vibration, and settling.

Division 4

4.3 - (a)

The word, "buses" has been

changed to "passenger carrying vehicles."

4.4 - (b)

A sentence has been added recommending that the filling connection terminate in the vapor space on the container to minimize pressure build up during filling operations.

4.4 - (e)

A new sentence has been added which considers the preceding requirements fulfilled for farm tractors whose construction provides inherent protection to valves and fittings.

4.6 - (a)

The old paragraph, relating to ICC safety devices, has been deleted and the following substituted: "Spring-loaded internal type safety relief valves shall be used on all motor fuel containers."

4.8 - (b)

The words "or an approved regulator" have been deleted and the following sentence has

(Continued on page 147, col. 1)

To sell her the *GAS* range, show her the *SELF-RELIGHTING* feature of the **ALLTROL® Center Simmer**

Let the customer *prove to herself* there's nothing so wonderful as that gas range* equipped with Alltrol Center Simmer. Turn the valve handle; let her hear it "click" into Center Simmer position. Ask her to blow the flame out, so she can see how it relights—automatically. It sells her more than a thousand words!

ONLY ALLTROL BURNERS HAVE A COMPLETE HEAT CYCLE



Full flame Starting Burner for quick boil or fast frying.



A full range of intermediate heats when wide spread of heat is needed.



Click...here's efficient "Center Simmer" that maintains boiling in any covered vessel.



Click...a gentle "Keep Warm" heat...without further cooking.

*Write for names of ranges featuring ALLTROL Center Simmer.

© Trade Mark Reg. U.S. Pat. Office



SEND FOR FREE BOOKLET,
"How to Sell More
Gas Ranges"
Address Dept. 103B

HARPER-WYMAN COMPANY

8562 Vincennes Avenue

Chicago 20, Illinois

"ALLTROL CENTER SIMMER" MAKES GAS THE WINNER!





ASSOCIATION NEWS

Alabama

Fred I. Palmer, Demopolis, is the new president of the Alabama L. P. Gas Dealers Association, elected at the association's recent convention in Montgomery. Other new officers include: Buster H. Stallworth, Monroeville, vice president; Margaret H. Krueger, Foley, treasurer, and John W. Rooney, Montgomery, executive secretary.

Convention-goers heard L. A. Brand, vice president of Empire Stove Co., speak on "The Second Step To Prosperity." Addresses were also delivered by A. B. Ritzenthaler, Tappan Stove Co., Sid Stapleton, Consolidated Gas Co., and Earl W. Gammage of Pan American Casualty Co.

Awarded to Mrs. Krueger and E. R. Hughes were plaques for outstanding service to the association.

East Central District Plans Conference

Preliminary plans for an East Central District "operating conference" on Oct. 21 in New York City have been announced. The session is scheduled for the Hotel New Yorker.

M. L. Trotter, LPGA president, has been invited as the principal speaker. Walter A. Naumer, Pyrofax Gas Co., New York, district director, will preside.

New England

Plans are fast developing for the "Fall Outing" of LPGA of N.E. to be held at the New Ocean House in Swampscott, Mass., Oct. 7. The program includes a luncheon to be followed by a top-notch speaker. The afternoon will be devoted to relaxation and sports including golf, tennis,

horseshoe pitching, cards, boat trip and the like. Then a banquet and following the banquet will be entertainment and dancing to exhaustion.

The New Ocean House is one of this country's better known resort hotels located approximately 20 miles from Boston on the North Shore. It is noted for its hospitality, spacious grounds, well equipped rooms and excellent food.

Members as well as non-members and wives and sweethearts are invited to attend the meeting.

West Virginia

The first West Virginia L. P. Gas Association, integrated with the national association, was founded at Clarksburg recently. The charter for the new association was presented by the District Secretary, William H. Plank, to the newly elected president, William Faulkner of Bluefield, W. Va.

The other officers elected by the new association were Samuel Gurson of Clarksburg, vice president; R. R. Scott of Philippi as secretary; R. L. Daugherty of Mineral Wells as treasurer, and C. Wade Gibson of Reedsville, national director.

The State will be divided into districts with a representative from each district. These directors, plus the officers of the association, make up the board of directors. Those elected as directors from the various districts were: Thomas A. Holden, Martinsburg, R. C. Lough, Morgantown, Howard J. Gibson, Elkins, Don Sacco, Cabin Creek, James Wood, Princeton, James Lawson, Logan, and W. H. Everett, Bridgeport, Ohio.

Wisconsin Short-Course Features Controls

A short-course of instruction on automatic thermostatic controls was

held recently under the joint auspices of the Wisconsin L. P. Gas Association and the national LPGA. Robertshaw-Fulton Controls Co. conducted the school.

The session, attended by 50 L. P. gas dealers and their personnel, covered heat control thermostats on L. P. gas ranges, water heaters and space heaters. Henry Johnson, Delavan Lake dealer, had charge of arrangements.

Coleman Named Secretary For Central States District



C. E. Coleman

Carol E. Coleman has been appointed district secretary in charge of the Central States District office of the Liquefied Petroleum Gas Association, Howard D. White, executive vice president of the organization, announced recently. He succeeds Robert C. Tanner, who recently resigned to accept a position with O. A. Sutton Corp., Wichita, Kans.

Mr. Coleman, whose headquarters will be in the Kaufman building, Wichita, after Sept. 1, was born in Sylvia, Kans. He was graduated from Kansas State College with a B. S. degree in agricultural economics and subsequently taught vocational agriculture for five years in three Kansas towns.

Following service in the Navy during World War II, he was sales representative for the American Agricultural Chemical Co., for a year and a half. In 1947, he helped incorporate Simonsen Propane Service, Quimby,

Iowa, and managed the business until June, 1953, when he sold his interest in the concern. He has since been selling furnaces and air conditioning equipment for the Johnson Tin Shop, Cherokee, Iowa.

Mr. Coleman has been active for several years in the Iowa Liquefied Petroleum Gas Association, and has served on a number of its committees.

Television Program Plugs Advantages of LPG

"Pushbutton Housekeeping."

This terse, attention-getting headline preceding television newsreel pictures shown recently by WHAS-TV, Louisville, neatly described an unique feature that highlighted the 1953 convention of the Kentucky LPGA, recently held in Louisville.

As a major offensive move against REA competition, Miss Florence Holiday, hard-working secretary of the association, conceived the idea of staging a special program for home economists. Calling the symposium "How Modern Can You Be?" she asked Lee A. Brand, vice president, Empire Stove Co., and chairman of the National Committee for LP-Gas Promotion, to direct the project.

Fifty-five home economists and home demonstration agents from all parts of the state and nearly 500 industry people saw the special show. In a series of fast-moving skits, talks and demonstrations, the home economists, all guests of local LPG dealers, were briefed on the advantages and conveniences of L. P. gas.

Mrs. Anne Clemons, assistant professor of home economics, University of Kentucky, was the lead-off speaker. Then in rapid order, Mr. Brand introduced the gas versus electricity subject and called upon each member of the "How Modern Can You Be?" panel.

Mel Trotter, Columbia, S. C., president of the Liquefied Petroleum Gas Association, traced the growth of the LPG industry. S. F. Wikstrom, field representative for the American Gas Association, told how the natural gas industry had expanded to serve 30 million customers.

Bill Johnson, Harper-Wyman Co., Chicago, assisted by Bissell Smith of the same concern, presented a gas versus electricity demonstration, followed by Dwight Sutherin, district sales manager, Caloric Stove Corp., who covered LPG clothes dryers. "Hot Water Magic," a skit presented by Frank McFerran, Ruud Manufacturing Co., Pittsburgh, Pa., gas range cooking tricks by Mel Ennis, employee training director, National Committee for LP-Gas Promotion, Chicago,



Salesman at work! Bill Johnson, Harper-Wyman Co., featured speaker at the Kentucky LPGA convention in Louisville, gave homemaker televiewers a preview of his gas cooking demonstration. Miss Marian Gifford, star of "Good Living," afternoon show over WHAS-TV, Louisville, listens carefully while Mr. Johnson explains "keep-warm" heat on a modern LPG range.

and brief remarks by Mr. Brand about LPG closed the show.

Publicity lined up by George J. Schulte, Jr., assistant director, LP-Gas Information Service, Chicago, in and around Louisville, gave the LPG story extra mileage at the consumer level. It included a half-hour homemaker telecast in addition to the TV newsreel placement. Mr. Johnson

was interviewed by the star of the show and demonstrated many conveniences and economies of LPG cooking. A four-column feature story on the woman's page of the *Louisville Courier-Journal* pictured Mr. Ennis in a cooking demonstration and quoted some of his remarks. A financial page story recounted the industry's rapid growth.



Rebecca Johnston, home demonstration agent from Henderson, Ky., learns about the efficient operation of a gas floor furnace from George Strode, Empire Stove Co., Belleville, Ill. Miss Johnston was one of 55 home economists who attended the sixth annual convention and trade exhibit of the Kentucky LPGA.

Frances Holliday Receives New Post

Miss Frances Holliday, Cumberland Natural Gas Service of Burnside, Ky., has been appointed to the chairmanship of the Gas Fuel Technology Foundation Committee, LP-GA president Mel Trotter has announced.

Miss Holliday is well known in LPG circles, serving now as a director of the national LPGA and as executive secretary of the Kentucky L. P. gas association.

The committee to which she has been named supervises the raising of funds for the scholarship awards in connection with the Gas Fuel technology course at Southern Technical Institute, Chamblee, Ga.

Illinois State Firemen Attend LPG School

Thirty-four members of the state fire marshal's staff of deputies met recently in Springfield, Ill., for the first deputy fire marshal's school. The deputies were assembled in groups of five and were taken through a modern L. P. gas bulk plant.

Instructions and demonstrations included hydro testing equipment for ICC containers, charging of cylinders, unloading of tank cars and transports, filling consumer bulk storage, filling of bulk trucks, safety procedures, and interpretation of Pamphlet No. 58. Cris Neely, LPGA staff engineer, was guest speaker at the luncheon which was held after the school adjourned.

Colorado Issues New Regulations

A new edition of "Colorado Law and Regulations Concerning the Use, Transportation and Storage of Liquefied Petroleum Gases," effective August, 1953, has been released by the Colorado State Department of Oils.

The new issue contains a number of changes and revisions of the previous regulations released in 1947. Requests for copies of the new book should be made to the State Inspector of Oils, 1136 Speer Boulevard, Denver.

AGA To Hold 35th Annual Meeting

The 35th annual convention of the American Gas Association will be held in St. Louis, Mo., October 26-28.

Federal Power Commission activities relating to the gas industry, a

review of accident and health insurance, public relations, promotion, gas pipeline operation and maintenance, and government controls are among the topics scheduled for discussion, according to Robert W. Ott, president of Laclede Gas Co., St. Louis, chairman of the general convention committee.

Two elections are on the agenda; one for officers and the other for directors.

Awards for outstanding accomplishments by gas industry members during the past year will be made by President Frank C. Smith during the second day of the meeting. These include such honors as the AGA Distinguished Service Award, the AGA Meritorious Service Award, the Beal Medal, the AGA Distribution Achievement Award, and the AGA Home Service Award, sponsored by "McCall's Magazine."

28th Annual Fall Meet For CNGA

A full two-day program of technical discussions and papers of general interest will be presented at the California Natural Gasoline Association's 28th annual fall meeting at the Los Angeles Ambassador hotel on October 8-9. This announcement was made by D. R. Arnold, general chairman, after reviewing the completed program with his committee of S. A. Bradfield, Southern California Gas Co.; M. W. Kibre, General Petroleum Corp.; Paul Magee, The Ohio Oil Co.; William R. Runbeck, Guy T. Martin & Co.; R. W. Todd, Pacific Lighting Gas Supply Co.; E. W. Walker, Western Gulf Oil Co.; J. H. Watson, Union Oil Co., and R. E. Williamson, The Cooper-Bessemer Corp.

The opening day, October 8, will present a program of forums and symposiums on gas gathering, engines and compressors, laboratory techniques and plants and processing. This program has been set up to satisfy a wide diversity of interests within the petroleum industry.

A field trip through the Los Angeles refinery of the Union Oil Co. will be of great interest as the tour is designed so that those attending will hear described and see the Thermofor and Fluid Catalytic Cracking plants with a total capacity of 57,000 bbls. per day, light hydrocarbon recovery facilities, hydrogen sulfide recovery system and the crystalline ammonium sulfate production from waste materials. This trip will be in place of the regular Friday morning general session.

Friday afternoon, October 9, such speakers as E. E. Pyles, Monterey Oil Co.; Dr. Harrison Brown, Caltech; Harold P. Huls, Public Utilities commissioner, and M. E. Spaght, executive vice president, Shell Oil Co., New York, will be heard.

It is stressed by the committee that membership is not required to attend these meetings and they are open to any member of the industry who is interested in being brought up to date on the industry in which he is employed.

Under the chairmanship of Fred Carter, Carter-Jones Co., the two-day session will be concluded with the "siesta hour" and the annual banquet, topped off with an entertainment feature that no one will want to miss.

Gas Institute of Miami Elects New Officers



L. R. Chandler

The Gas Institute of Greater Miami elected new officers for the fiscal year beginning August 1, 1953, at a dinner at the Biscayne Terrace Hotel. Named to head the organization were: C. R. Vetter, South-eastern Natural Gas Corp., vice president; D. N. Mainguy, president, Main-guy Industries Corp., Institute advertising agency; Sid Langer, Dade Gas Corp., secretary; Roy E. Jones, Peoples Water and Gas Co., treasurer, and L. R. Chandler, Gas-Oil Products, Inc., president.

Due to greatly stepped up activities of the Gas Institute, a new operational committee has been formed to handle the increased details of the organization. Chairmen of the committee departments are as follows: Sam Coolik, Public Gas Co., heading problems relating to bottled gas; Ted Bergman, gas division of Florida Power and Light Co., pipeline problems; Joe Garfield, Miami Bottled Gas Co., membership details; Sid Langer, Dade Gas Corp., FHA-VA liaison work; Jack Knighton, Knighton-Keune Co., manufacturer relationship, and C. F. Wheler, Brook Gas Co., liaison with builders and contractors.

Safety in Loading Limelighted By NGAA

Safety precautions for truck loading of L. P. gas have just been released by the Safety Committee of

THERE'S BIG

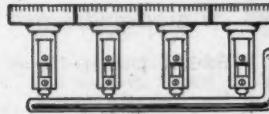
Sales Excitement in Circulator Heaters! and a new leader—

No boom! No bang! No noisy ticking!



These
are the big
SELLING ADVANTAGES
that make
EMPIRE
DIFFERENT!

"Thriftmatic"
Gas
BURNER



Easily removed from front—with
out disturbing radiants

Modern base construction allows
space for cleaning beneath heater
— free air circulation protecting
floor from excessive heat

STOVE COMPANY

BELLEVILLE, ILLINOIS

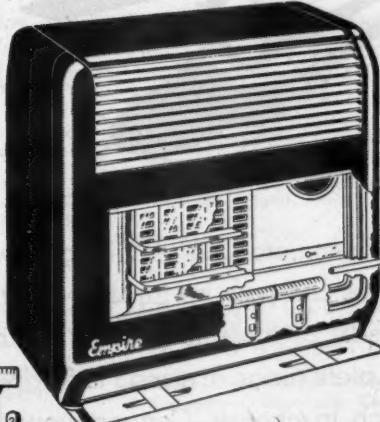
WORLD'S LARGEST MANUFACTURER OF Gas FLOOR FURNACES

EMPIRE

Gas CIRCULATOR HEATERS

The trend toward circulator heaters is here to stay! It's growing fast! Eager inquiries are pouring in . . . more every day! Here's a tremendous merchandising opportunity for the alert dealer who knows and *sells* the best. EMPIRE, the heater that offers *all* the new advantages at a greater saving . . . that can be installed easily and inexpensively in *any* type home.

Completely cool from top to bottom



Stainless steel radiant rest, specially
designed for long life — service free

Beautiful chrome plated radiant panel
and dress-guards

Completely new in styling, with beau-
tiful baked on brown enamel finish

High temperature pyrex glass

the Natural Gasoline Association of America.

Written primarily for the supervising loader at loading racks, responsibility for the safe loading of trucks is placed squarely on the loader, and the truck driver is relieved of all duties other than spotting his vehicle as directed. Some honest differences of opinion with respect to jurisdiction of activities at loading racks has led to some hazardous situations in the past, and the committee believes that adherence to the new rules will eliminate arguments and bring greater safety.

The cards are printed in two sizes, letter size for posting at loading racks and postcard size for posting in truck cabs. They are available from the offices of the NGAA, 422 Kennedy Building, Tulsa, at four and two cents each respectively.

Employment Service For Industry

Arrangements to provide an employment clearance service through which experienced applicants will be directed to places in need of qualified help is the latest industry assistance

and will be operated through the district offices of the LPGA.

Firms are asked to furnish the district office with information regarding both job openings and applicants. A short description of duties involved, salary, information regarding living and housing conditions in the town involved, plus any pertinent information gained on applicants, should be forwarded to district offices.

Charles E. Webber Heads NGAA Committee



Frank M. Perry

Charles E. Webber, Sun Oil Co., Philadelphia, has been named chairman of the main technical committee of the Natural Gasoline Association of America, according to a recent announcement by NGAA.

President Frank M. Perry, vice president, Cities Service Oil Co., Bartlesville, Okla. Vice chairman of this group is Roy Schuster, Chicago Corp., Corpus Christi, Texas.

The number and diversity of important studies have expanded so greatly in recent years, according to Mr. Perry, that the association has had to assign supervision of technical activities to the main committee and set up sub-groups to handle specific problems.

The Plant Corrosion committee, which has operated as a cooperative research group for 10 years under the name of NGAA Gas-Condensate Well Corrosion Research Project, has expanded its activities to include corrosion at plants. Chairman of this committee is Edward C. Grecco, United Pipe Line Co., Shreveport. Vice chairman is E. W. Wallace, Shell Oil Co., Houston, Texas.

A. W. Breeland, Lone Star Gas Co., Dallas, Texas, was reappointed chairman of the Safety committee, and John Stradinger, Humble Oil & Refining Co., Houston, Texas, was named vice chairman.

The Statistics committee will be headed by W. R. Lund, Warren Petroleum Corp., Tulsa, Okla., and J. B. Haefer, Shell Oil Co., Houston, Texas.

F. A. Shellhorn, vice president, Anchor Petroleum Corp., Tulsa, will again head the important Traffic Committee with F. M. Holloway, Skelly Oil Co., Kansas City, as vice chairman.

VIKING LP-GAS PUMPS

NOW AVAILABLE *with* MECHANICAL SEAL

FIG. 190
VIKING LP-GAS PUMP
WITH MECHANICAL
SEAL. 5 TO 55 GPM
SIZES.

The complete line of Viking power driven LP-gas pumps can now be furnished with either mechanical seal or metallic packing. Both available in the complete range of sizes 5 to 55 gpm. 37 models from which to choose. Convert your present pump to this new mechanical seal type. Ask for details.



For complete information, send for free bulletin 2303B and supplement sheet SP312B today.



VIKING PUMP COMPANY
Cedar Falls, Iowa

GAMA Plans Big Range Promotions

The Gas Appliance Manufacturers Association will place special emphasis on dramatic sales demonstrations as the key point in its participation in the 1953 Old Stove Round-Up.

A Round-Up broadside, being mailed to more than 20,000 appliance dealers, 2,000 L. P. gas dealers and 2,000 utility company sales executives, points up the importance of having connected ranges on the sales floor so that salesmen can demonstrate the ranges in operation. GAMA also offers dealers a 20-page booklet, "Quickie Demos that Sell More Automatic Gas Ranges."

The demonstration theme is also stressed in a series of advertisements scheduled to run in a long list of trade publications. Each of the ads features one of the demonstrations described in the GAMA booklet. In addition, GAMA is offering 25 cash awards to salesmen who submit the most effective new sales demonstration ideas.

Gas Water Heater Shipments Top '52

Shipments of automatic gas heaters continued to rise during July and topped the 1952 total for the first seven months by 24.8%, according to the Gas Appliance Manufacturers Association.

During July, 173,000 units were shipped to dealers and distributors throughout the country, increasing the total for 1953 to 1,306,400, according to Edward R. Martin, GAMA's director of marketing and statistics.

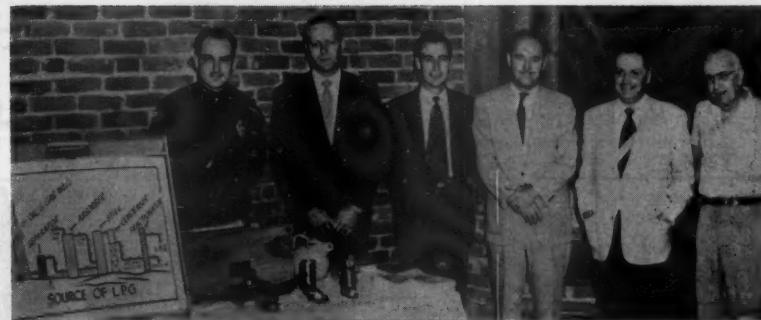
Compared with the July, 1952 total of 131,300 units, last month's shipment recorded a 31.8% increase. Shipments for the first seven months of 1952 amounted to 1,046,700 units, Mr. Martin said.

The GAMA figures are based on a telegraphic survey conducted among leading manufacturers of automatic gas water heaters and expanded to represent the entire industry.

New Building For Oklahoma LPG Firm

Work on a new building and warehouse for Morrison's Automatic Butane Gas Co., Marlow, Okla., is underway and, according to Ralph Morrison, owner, is scheduled for completion in October.

The new structure will be 70 ft. by 100 ft. and will be fireproof. Construction is of concrete blocks with brick veneer.



Photographed during the recent L. P. gas training courses in New Mexico were, left to right, Bill Lucas, New Mexico State Highway Patrol; Truman Adkins, Pan American Casualty Co.; Dwight Tope, Cliff Kealey State Agency; Dick Martin, New Mexico L. P. Gas Association; Cliff Kealey, Cliff Kealey State Agency and J. C. Crawford of Liquefied Petroleum Gas Association, Inc. These courses were held under the sponsorship of the New Mexico L. P. Gas Dealers Association and were part of the regular training program of Pan American Co.



All associations are invited to send in dates of their forthcoming meetings for this calendar.

OCTOBER

- Oct. 1-2—Illinois IPGA. Annual convention. St. Nicholas Hotel, Springfield.
- Oct. 11-17—Oil Progress Week.
- Oct. 19-23—41st National Safety Congress and Exposition, Conrad Hilton, Congress, Morrison and Hamilton Hotels, Chicago.
- Oct. 21—LPGA East Central District. Operating conference. Hotel New Yorker, New York City.
- Oct. 23—NGAA Southern Regional Meeting, Blackstone Hotel, Tyler, Tex.
- Oct. 26-28—American Gas Association. Annual Convention. Kiel Auditorium, St. Louis.

NOVEMBER

- Nov. 2—Minnesota Petroleum Gas Association. Fall Meeting. Nicollet Hotel, Minneapolis.
- Nov. 8-10—Ohio LPGA. Fall Meeting. Gibson Hotel, Cincinnati.
- Nov. 9—Mississippi LPGA. Annual Fall meeting. Robert E. Lee Hotel, Jackson.
- Nov. 9-12—American Petroleum Institute. Annual meeting. Conrad Hilton Hotel and Palmer House, Chicago.
- Nov. 20—NGAA Panhandle - Plains Regional Meeting, Herring Hotel, Amarillo, Tex.

1954

JANUARY

- Jan. 25-26—Michigan LPGA winter meeting, Pantlind Hotel, Grand Rapids.

FEBRUARY

- Feb. 26—NGAA Permian Basin Regional Meeting, Lincoln Hotel, Odessa, Tex.

MARCH

- Mar. 22-24—LPGA Southeastern District. Annual convention. Atlanta-Baltimore Hotel, Atlanta, Ga.

APRIL

- April 5-7—Nebraska Liquefied Petroleum Gas Dealers Association. Annual convention and trade show. Fontenelle Hotel, Omaha.

- April 21-23—NGAA 33rd Annual Convention, Baker Hotel, Dallas, Tex.

- April 24—Liquid Gas Dealers Association of California. Annual Meeting, Palace Hotel, San Francisco.

- April 25-27—Mississippi LPGA. Annual Convention. Edgewater Gulf Hotel, Edgewater Park.

MAY

- May 9-12—LPGA annual convention and trade show. Conrad Hilton hotel, Chicago.

- May 19-21—Gas Appliance Manufacturers Association. Annual meeting. Drake Hotel, Chicago.

JUNE

- June 28-29—Wyoming LPGA. Annual Convention. Townsend Hotel, Casper.

when you go after the **UNIT** and
SPACE HEATER business...



THERE ARE 4 BIG PROFIT OPPORTUNITIES

WITH

bryant

Here are four Bryant units that have what it takes to turn quick profitable sales:

1. **The 327 Unit Heater**—the smallest unit in relation to capacity on the market today! Its small size and light weight make it less costly to install. Improved design provides quiet operation . . . more comfortable heat because fan starts only after element gets warm. It's a superior unit at a competitive price. And there are sizes for every requirement.

2. **The 428 Space Heater**—a fan circulating heater with the one big feature that other units lack—*no forward air-blast*—the result of an exclusive, patented front that gently diffuses warm

air. It's quiet . . . it's attractive . . . it really sells.

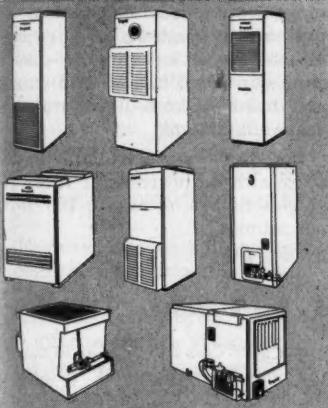
3. **The 426 Radiant Circulating Heater**—a smartly styled console-type heater that offers new benefits in comfort and safety. It's available in four sizes, all A.G.A. approved for all gases.

4. **The 401 Radiant Panel Heater**—a slim, trim radiant circulating heater that mounts on the wall. It installs easily. There's no need to cut floors or carpeting. And it's fully "flame-protected" from children's hands.

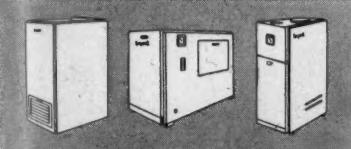
For more details call your Bryant distributor or write: Bryant Heater Division, Affiliated Gas Equipment, Inc., 17825 St. Clair Avenue, Cleveland 10, Ohio.

THE MOST
COMPLETE LINE OF
HOME CONDITIONING
EQUIPMENT IN
THE INDUSTRY

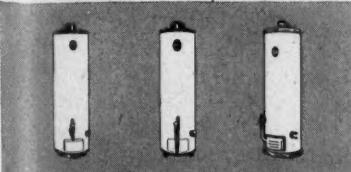
21 FURNACES... 83 SIZES



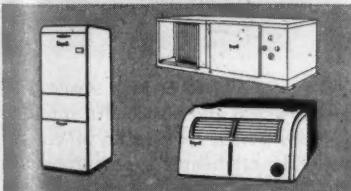
4 BOILERS... 45 SIZES



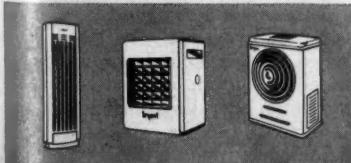
5 WATER HEATERS... 15 SIZES



3 AIR CONDITIONERS... 7 SIZES



6 UNIT AND SPACE HEATERS... 25 SIZES



bryant®

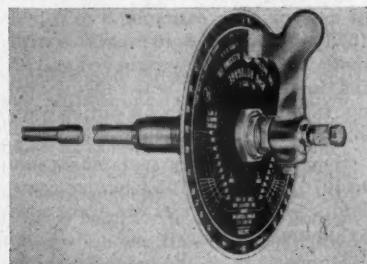
HEATING • AIR CONDITIONING • WATER HEATING

Products and Trade Publications

To secure further information on products or new publications, fill out the coupon and mail, indicating by number the items desired.

1. Liquid Level Gauge

The new No. 2092 "Rego Rotogage" announced recently by the Bastian-Blessing Co. is suitable for use on stationary containers more than 60



in. and mobile containers more than 24 in. in diameter. The gauge has two purposes: to determine the liquid content of an L. P. gas container and disclose when the maximum permitted filling level has been reached while filling.

Advantages of the new gauge, the manufacturer states, are a special packing, developed after long research, to assure years of trouble-free operation, and a supplemental seal on the stem that seals with the pressure, permitting repair by repacking of Rotogage while under pressure. Indicator handle turns easily, yet holds pre-set position firmly.

Dial face, calibrated to left and right of indicator handle, makes it possible to check fuel level on both sides, an advantage where mobile equipment is on a vehicle parked on an incline or where stationary tank is not level. An average of the two readings give the true liquid level.

Gauge is available with proper dials to permit center-mounting on side or end of tank. A 1-in. NPT thread connects the gauge to the container fitting.

Bastian-Blessing Co.

2. Thermostat

A new improved home thermostat that shatters tradition by being round



READERS' SERVICE COUPON

Just fill in this coupon for Products information and copies of new publications, and mail to

BUTANE-PROPANE NEWS, 198 S. Alvarado St., Los Angeles 57, Calif.

10/53 Fill in numbers of

items in which you are interested.

No. No. No.
No. No. No.
No. No. No.

NAME AND TITLE.....

FIRM'S NAME.....

ADDRESS.....

CITY.....

ZONE..... STATE.....

instead of rectangular and is designed so it can be decorated to suit individual homes and tastes is announced by Minneapolis-Honeywell Regulator Co. It represents the first major change in the basic styling of home thermostats since the invention of the first thermostat 70 years ago, the company said.

The new instrument, which actually is the shape of half a sphere, combines important engineering changes with its completely "new look." It was designed by Henry Dreyfus, noted industrial stylist, in cooperation with Honeywell engineers and is the result of four years of development work.

The new instrument will become the company's standard thermostat for home use. Nationwide distribution of the new model—to be known as the "Honeywell Round"—already is being made to original equipment customers, wholesalers and dealers, at no increase in price.

The decorative features are unique. First of all, the round design itself is eye-catching and is specifically styled from the standpoint of modern home decorating trends. Secondly, the cover can be easily removed without tools and painted to match any decorating theme.

Chief among the engineering improvements is an enclosed, dust-free mercury switch which will eliminate the open contact chronic maintenance problems of the older types. Also introduced for the first time is a bimetal temperature indicator. An easy to read dial replaces the old clinical type thermometer traditionally used in heating thermostats. The temperature indicator and the control scale are combined in one easily read dial. The thermostat is set simply by turning a simple, knurled plastic ring. The entire unit is housed in a plastic cover that snaps off easily fordecorating.

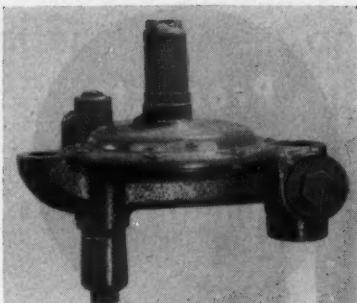
The decorator feature also has an important engineering advantage, the company explained. Since the thermostat can be placed on any wall and decorated to match the color scheme of the room, its location can now be chosen with respect to proper sensing of room temperature—the chief function of the instrument.

*Minneapolis-Honeywell
Regulator Co.*

3. Regulator

A new mercury seal version of its standard 107-1 service regulator has been introduced by Rockwell Manufacturing Co.

Designed to relieve larger volumes



of gas in emergencies, the modified "107-1" is being produced as a result of the revision of many utility safety codes—a revision calling for more effective relief devices.

The new regulator, the manufacturer claims, will relieve a greater volume of gas than any other device of its type. For example, a modified 107-1 employing a 3/16-in. orifice with main valve assembly removed and 85 lbs. inlet pressure, will relieve 2400 cu. ft. per hour with an outlet pressure build-up of less than 1 lb.

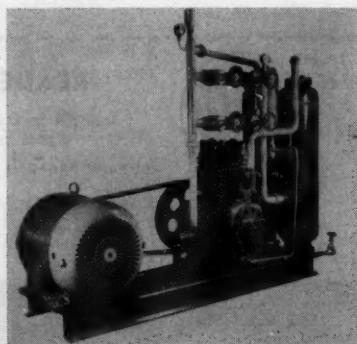
Separate mercury seals adaptable to 107-1, 107-2 and 107-3 service regulators already in service are also available.

Dimensions of the new regulator are the same as those of the "107-1" except for the mercury well and vent, which are slightly larger than the inlet chamber and vent of the "107."

Rockwell Manufacturing Co.

4. Liquid Transfer

In recent field tests conducted in North Carolina and Nebraska, the new Roney compressor accomplished liquid transfer from a 10,000-gallon tank car in one hour and 10 minutes. The vapor recovery to 30-lb. tank car pressure was completed in one hour and 35 minutes. In Texas and Ari-



zona the liquid transfer from a 7000-gallon transport was completed in 45 minutes—vapor recovery in 60 minutes. This method of high speed

transfer is one of the best methods of increasing profits to the bulk plant operator.

Other outstanding features of the new Roney compressor are: rugged construction; compact design; all parts easily accessible; extra large copper lines and manifold; extra large and efficient accumulator tank; automatic oil return to crankcase; generous oil filter—fills while running; trouble-free mechanical seal; pressure lubrication; large capacity; eliminates oil inclusion in product; explosion proof motors and starters; and drains on both oil separator and accumulator tank.

Compressors are available in three sizes with liquid transfer rates from 42 gallons per minute to 190 gallons per minute.

Roney, Inc.

5. Space Heater

Vacuum Gas Burner Co. announces the new AGA-approved "Blu-Flame"



VG series FM forced air space heaters in 45,000 and 60,000 Btu input capacities which feature an all-electric welded unit heater type combustion chamber to provide maximum heat transfer area for high efficiency.

This new line of "Blu-Flame" heaters uses completely enclosed, slow speed motors and dynamically balanced aluminum fan blades to insure minimum operating noise levels. The "Unitrol" 14A is standard valve equipment, and electric-type wall thermostat controls are available. Special stainless steel ribbon burners are available for L. P. gas installations where absolutely noiseless operation is desired. This new equipment eliminates all flash-back and extinction noises.

Even the new automatic fan switch

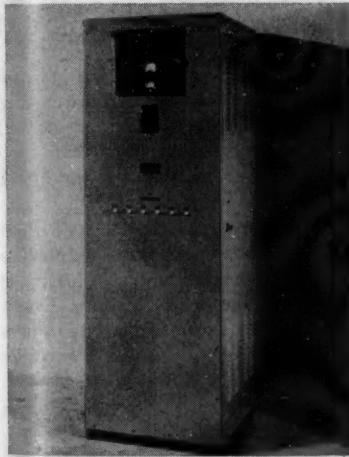
on the "Blu-Flame" VG series heaters has voided the operating noise associated with customarily used disc type controls. These new completely automatic units are being marketed in decorator colors of two-tone pastel green and brown, hammerloid infrared baked enamel.

Vacuum Gas Burner Co.

6. Gas Indicator and Alarm

Sequential samplings of potentially explosive atmospheres from six separate locations is performed by the new Johnson-Williams Model RV-6 indicating type combustible gas alarm system. Model variations are available to permit sampling from any number of locations from two to eight.

In operation the unit draws samples continuously through metallic tubing and analyzes them point by point on a 30-second cycle. The detecting instrument is a platinum filament Wheatstone Bridge detection circuit. Indication of the presence of



combustible gas is provided on a panel-mounted indicating instrument, while the sample line currently being analyzed is indicated by a series of pilot lights on the front panel.

If the combustible gas or vapor reaches a pre-selected level the instrument stops cycling automatically, shows a red warning light, and energizes an external circuit to actuate a remote warning alarm. This condition prevails until either the combustible is dissipated or corrective measures are taken.

Other features include: a push-button air-test control which admits known pure air to the analyzer for balancing the circuit; a heavy-duty rotary positive displacement air pump to maintain a vacuum adequate to permit the use of relatively



Bob Allen (left), sales manager for Squibb-Taylor, Dallas, presents a copy of Squibb-Taylor's new catalog to John Banks, president of Dallas Tank Co. Said to be the most complete presentation of equipment for LPG dealers, the catalog has six sections devoted to regulators and assemblies, valves and fittings, liquid level gauges, liquid transfer equipment, installation fittings and general items.

small sample lines; a separate voltage adjustment for the sensing element filament to establish optimum filament temperature for the particular gas or vapor to be detected; and an arrangement which draws continuous samples through all lines in the system so that the sequential analysis is always performed on fresh samples.

The J-W Model RV-6 is housed in a free-standing steel cabinet for complete enclosure. Measurements are 22in. wide by 18-in. deep by 68-in. high. Operation is from 115 volts AC, 50-60 cycles.

Johnson-Williams, Ltd.

7. Burning Machine

The Power Flame burning machine is designed to control both weeds and insect pests in alfalfa and other field crops not grown in rows.

The machine is designed to mount

on the back of a four-wheel trailer carrying the fuel supply tank. Since fuel consumption is between 40 and 50 gals. per hour, a 500-gal. tank is recommended. Fuel vaporizer is built into the center section of the burner tank. Combination of pressure differential valve and regulator provides automatic change from liquid to vapor withdrawal, which maintains temperature and pressure in tank within close limits and prevents over-pressuring due to absorption of burner heat when working down-wind.

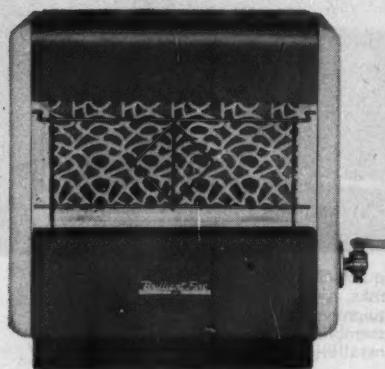
Burner assembly consists of three 6-ft. sections, covering an 18-ft. swath. All burner sections may be operated separately, or in any combination, to cover 6, 12 or 18 ft. Trailing "hovers" with readily replaceable runner shoes hold heat down on ground for maximum kill of weeds and insects.

Manchester Welding and Fabricating Co.



Brilliant Flame
CIRCULATORS
 FOR ALL GASES

COLOR HARMONY
 decorator models



LITTLE GIANT

Dove Gray & Coral • 3 Sizes



HI-CAPACITY

Ivory & Brown



LOWBOY

Opal-Beige • 7 Sizes

WRITE FOR CATALOG 53
 See Complete Line. Get Dealer Plan.

**THE OHIO FOUNDRY
 & MANUFACTURING CO.**
 "Quality Heating Equipment Since 1846"
STEUBENVILLE, OHIO

8. Incinerator Flue

A long-felt need has been satisfied by the recent introduction of the pre-fabricated Monarch safety flue. This has been fully approved for use with the Calcinator, or other gas-fired Incinerator, by the Los Angeles city building and safety departments.

An outstanding feature of its design is the speed of installation. No special tools are required and there are no holes to drill, resulting in hours of time saved. It is equally effective used in existing buildings, or installed in buildings now under construction, and can be enclosed inside the walls or against the outside of the building as desired.

The Monarch safety flue is pre-assembled in four sections, which makes for easy handling, with simple "S" clips and drives to make positive air-proof joints. A patented construction prevents inside flue wobble, and the whole unit is extremely rigid.

Two models are available—MC-8 and MC-10. The MC-8 has a 6-in. Vitreous high heat enameled liner enclosed in an 8-in. outer casing, providing a free flow of cold air surrounding the main flue. The MC-10 is the same as the 8-in. model with an additional 10-in. casing, providing a second air space.

Special adapters are available for all makes of gas fired incinerators.
P.B.R. Metal Products, Inc.

9. Gas Water Heaters

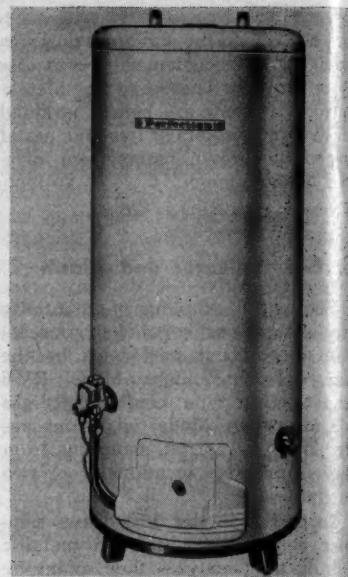
Perfection Stove Co. is currently announcing its first line of gas water heaters, for use with natural, manufactured or L. P. gas. In the deluxe gas water heater line there are 20, 30 and 40-gallon models available.

Each of these deluxe gas water heaters is backed by a 10-year written guarantee, covering the entire heater the first year against any defect, whatsoever. In fact, the guarantee makes it possible for the owner to receive a complete new heater, instead of merely repair parts, throughout the 10-year guarantee period.

A 100 percent safety control automatically shuts off all gas if the pilot flame is extinguished—no gas can flow to the main burner until the pilot is burning. There is no extra charge for 100 percent safety shut-off for L. P. gas, either.

The tank is protected against corrosion by a magnesium alloy rod. The super-durable steel tank is pressure-tested to 350 pounds per square inch, hot-dip galvanized inside and out for long service.

The casing of the Perfection gas water heater is finished in lustrous



white baked enamel with hammerloid gray enamel base and supports.

Perfection Stove Co.

10. LPG Torch

The Chinook Wind all purpose heating torch operates from any standard L. P. gas bottle, and its versatility includes weed burning, pre-heating, melting, thawing and branding.

For use wherever quick, safe direct flame heat is needed, the all purpose torch has a stem which is jointed to provide either 24- or 44-in. length. Arm rest on upper section distributes weight along forearm and wrist, for balanced, easy action when using.

Handy cart, welded into a single unit, gives Chinook quick, easy mobility, even over corrugations and rough ground. Balanced on rubber-tired ballbearing wheels, it makes a carry-all for cream cans, grain sacks, cement, etc.

International Manufacturing Co.

11. LPG Pump

Following a long period of testing in the field, the new Invader pump for butane-propane gas has been placed on the market by The Schirmer-Dornbirer Pump Co. It is designed for truck mounting or stationary service.

The construction of this pump is similar to the company's other Invader rotary pumps, with rounded teeth that provide a rolling contact between the gears. It has several distinctive features, however, which

Light the way to



Magic Chef features for cooking magic

• "MAGIC-RAY" SWING OUT BROILER • RED WHEEL OVEN HEAT REGULATOR • "MAGIC OVEN-EYE" • MAGIC CHEF UNI-BURNER • "MAGIC-AIRE" DEODORIZING LAMP • PLUS many other additional features.

Magic Chef INC. ST. LOUIS 10, MO.

more women cook on Magic Chef than on any other range

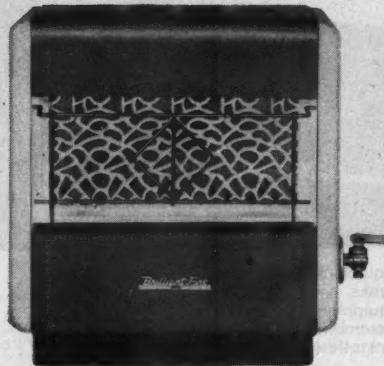
EASIER SALES!

Watch your LP customers' eyes light up when they see the "magic oven-eye"! LP users are interested in anything that means easier, better baking. They know and trust the reliability and dependability of *Magic Chef*. Show them the "magic oven-eye" . . . watch sales come faster with *Magic Chef*, the range LP users everywhere prefer.



Brilliant Fire
CIRCULATORS
 FOR ALL GASES

COLOR HARMONY
 decorator models



LITTLE GIANT
 Dove Gray & Coral • 3 Sizes



HI-CAPACITY
 Ivory & Brown



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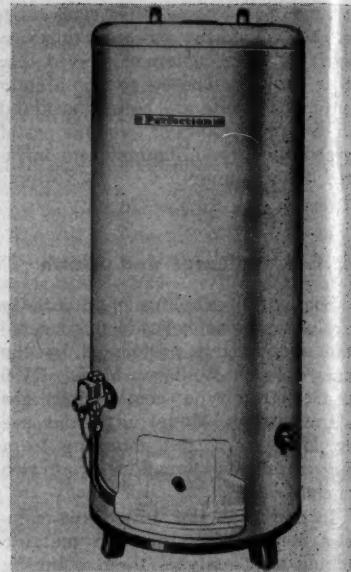
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11. LPG Pump

Following a long period of testing in the field, the new Invader pump for butane-propane gas has been placed on the market by The Schirmer-Dornbirer Pump Co. It is designed for truck mounting or stationary service.

The construction of this pump is similar to the company's other Invader rotary pumps, with rounded teeth that provide a rolling contact between the gears. It has several distinctive features, however, which

Light the way to



Magic Chef features for cooking magic

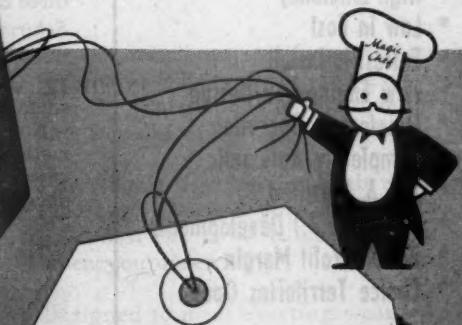
- "MAGIC-RAY" SWING OUT BROILER • RED WHEEL OVEN HEAT REGULATOR • "MAGIC OVEN-EYE" • MAGIC CHEF UNI-BURNER • "MAGIC-AIRE" DEODORIZING LAMP • PLUS many other additional features.

Magic Chef, INC., ST. LOUIS, MO.

more women cook on Magic Chef than on any other range.

EASIER SALES!

Watch your LP customers' eyes light up when they see the "magic oven-eye"! LP users are interested in anything that means easier, better baking. They know and trust the reliability and dependability of *Magic Chef*. Show them the "magic oven-eye". . . watch sales come faster with *Magic Chef*, the range LP users everywhere prefer.



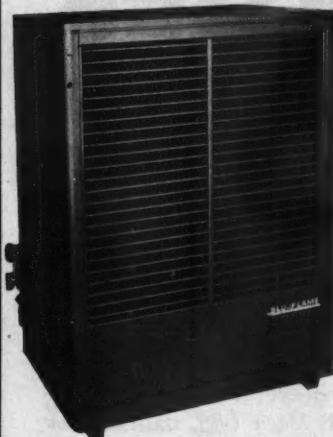
You see the LIGHT when
the oven heat's RIGHT!

You take the guesswork out of oven pre-heating when you sell *Magic Chef*. Your customer just turns on the oven, sets the Red Wheel Regulator . . . and the "magic oven-eye" tells her when the oven's ready. She'll be cooking for exactly the right time at just the right temperature with *Magic Chef*!

BLU-FLAME

(F M)

Floor Model HEATERS



- High Efficiency
- Low in Cost
- Easiest to Install
- New Engineered Design
- Quietest in Operation
- Completely Automatic
- A.G.A. Certified
- Special (L.P.) Developments
- Better Profit Margin
- Choice Territories Open

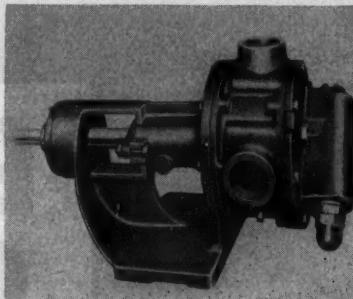
100% safety controls are found in the BLU FLAME heater with no popping or crackling noise. It has a heavy gauge heat exchanger, all electric welding, and a built-in draft diverter. Available in two decorator color finishes: hammerloid pastel green or cocoa brown. In 45,000 and 60,000 BTU inputs for natural, manufactured, mixed and LP gases.

Write today for literature, prices and exclusive franchise openings

**VACUUM GAS
BURNER CO.**
OLEAN, NEW YORK

make it especially suitable for pumping butane-propane and other "dry" liquids. It is equipped with a double mechanical seal, giving double assurance against leakage.

A double row radial thrust bearing



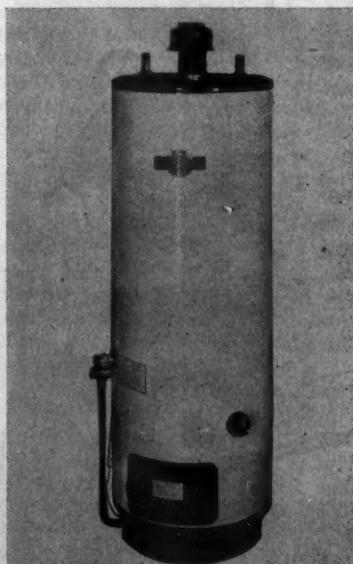
holds the shaft in alignment under all conditions. Double seal caps protect this bearing against wear, by keeping out water and dirt.

The relief valve is reversible for changing the direction of rotation. Joints cannot leak because "O" rings are used instead of gaskets—assuring tight metal-to-metal fit. The grease chamber holds a four-month supply, and the end of the shaft is 1 1/8-in. diameter for use with power take-off. This new pump is being offered in three capacities: 20, 30, and 55 g.p.m. Schirmer-Dornbirer Pump Co.

12. Water Heater

A new line of low priced gas automatic water heaters, the "super-economizer" series is being introduced by the Harrison Steel Cabinet Co.

The new line includes a 20-gallon



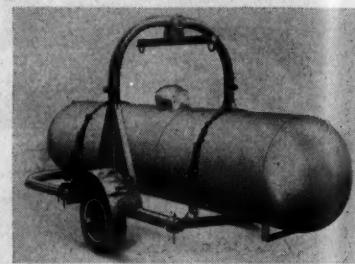
model, a 30-gallon unit, and a 40-gallon heater. These units feature extra heavy gauge galvanized tanks, normally found in higher priced models. Large access door, glass insulation, brass draincock, heavy gauge draft diverter, drum base and a beautiful modern low silhouette.

The firm's entire production line has been expanded to facilitate building the new units, and the first "super-economizer" models are ready for immediate shipment to dealers.

Harrison Steel Cabinet Co.

13. Tank Trailer

The Brindle Tank Trailer, designed for one man operation, is offered by the H. & H. Equipment Co. The trailer is adaptable to carrying all sizes of



domestic tanks up to 1000 gallons, and has a guaranteed load carrying capacity of two tons.

The trailer frame is formed from "U" shaped tubular members for both horizontal and vertical structures, welded together and reinforced at the junctures by heavy channel steel braces. Load carrying cross members slide on the side members of the frame, locking in place with pins. Integral hoist in the vertical arch enables one man to raise and lower the tank, and by removing the cross members under the load, the tank can be dropped in place at any location over which the trailer can be moved.

The hitch on the Brindle trailer has been fully approved by ICC. Safety chains comply with requirements of Indiana State Highway Police. Complete specifications are available from the manufacturer.

H. & H. Equipment Co.

Product Information

Mutual Liquid Gas Equipment Co., Inglewood, Calif., has just published a new catalog — No. 993 — which covers the company's industrial furnaces and torches.

YOUR BEST BET!
**...for metered
service..**



LP-Gas distributors with metered service systems have learned through experience that they can depend on Sprague Meters and Regulators.

For trouble free service with the accuracy both you and your customer want your best bet is — to specify Sprague when you order.

Designed to meet exacting weather conditions, engineered for minimum wear at salient points — Sprague Meters and Regulators are a good investment in the future for you.

SPRAGUE ZEPHYR illustrated.

Inquire about the entire line of Sprague Meters and Regulators for LP-Gas.

**THE SPRAGUE METER
COMPANY**

BRIDGEPORT, CONNECTICUT

DAVENPORT, IOWA • HOUSTON, TEXAS • LOS ANGELES & SAN FRANCISCO, CAL.

New Foot Ring Mastic Stops Rust on LP Gas Cylinders

Royston Laboratories, Inc. (first and only firm in their industry to join the L.P.G.A.) were swamped with requests for samples of their new corrosion-resistant Roskote Foot Ring Mastic at the L.P.G.A. Convention. There was good reason for this unusual interest. Roskote Foot Ring Mastic gives LP gas cylinders matchless protection against moisture, acids, alkalies, electrolysis and the resulting damage by corrosion. It withstands heavy abrasion, won't become brittle or sag through a temperature range of -40°F to 375°F.



The foot ring of the cylinder at the left has been coated with Roskote Foot Ring Mastic. The one on the right, coated with an ordinary paint has already started to blister and rust.

Easily Applied

This rust preventive mastic is applied by either brush or spray gun. It is applied cold and dries in approximately one hour. It's non-toxic, safe to use without harming skin.

Tough

Its horny film withstands the most severe vibration, distortion and bend tests. It does not oxidize, alligator, crack, check or scale.

Saves Rusted Tanks

On foot rings that have started to rust, the surface should be wire-brushed to remove loose scale, then coated with Royston Red Primer 4452A. The primer will arrest further rusting and form a tight bond to the metal. Roskote Foot Ring Mastic should then be applied to form a heavy, effective moisture barrier.

Wide Industry Acceptance

Over 100 major utilities, pipeline and oil companies have adopted Royston materials to prevent losses due to corrosion of buried and exposed steel structures. Royston's special formulations for varied industries have earned for them the reputation of a leading manufacturer of "tailor-made" coatings for corrosion control. Many 30,000 gallon LP gas underground storage tanks and thousands of gasoline storage tanks have been coated with Roskote Mastics.

Free Samples

For further information and free samples of Roskote Foot Ring Mastic and Royston Red Primer 4452A write to:

ROYSTON
LABORATORIES, INC.
BLAWNOX, PA.



Revere Copper and Brass

Election of James M. Kennedy as chairman of the board and chief executive officer of Revere Copper and Brass, Incorporated, and of Charles A. Macfie as president of Revere, was announced by the company recently. The changes are effective immediately.

Mr. Kennedy, 54, previously president, succeeds the late James J. Russell, who died August 1. Mr. Macfie, 57, the new president, has been vice president and general sales manager of all rolling mill sales.

Announcement also was made of the appointment of Raymond P. Winberg, 56, as Revere's general sales manager to succeed Mr. Macfie. A vice president of Revere since 1950, Mr. Winberg has been in charge of the Rome division in Rome, N. Y., the company's largest plant. He will move into Revere's executive offices in New York City.

Election of Robert M. Lake, 46, as a vice president of Revere was also announced. Mr. Lake, who has been sales manager of the Rome division since 1950, will succeed Mr. Winberg as vice president in charge of that division.



R. G. Campbell



H. H. Holmes

American Meter Co.

C. B. Dushane, vice president of sales of American Meter Co., has announced the appointment of two new sales engineers. The two men are R. G. Campbell and H. H. Holmes. Mr. Campbell is now a representative with the Los Angeles office of the company, and Mr. Holmes is now a representative of the company in

western Oklahoma and Kansas.

Mr. Campbell attended the University of California at Berkeley and was with the Southern California Gas Co. before becoming a member of the American Meter organization. He is a member of the Southern California Meter Association and the California Natural Gasoline Association.

Mr. Holmes received a degree in mechanical engineering at the University of Texas. After experience with North Electric Manufacturing Co. of Ohio and Refinery Supply Co. of Tulsa, Okla., he joined American Meter Co., Westcott & Greis Division, Tulsa. He is a member of the Tulsa chapter of Instrument Society of America.

Gulf Oil Corp.



E. A. Jamison

Edward A. Jamison has been appointed manager of L. P. gas sales for Gulf Oil Corp.

In his new position, Mr. Jamison will be responsible for the sale of L. P. gas, natural gasoline, and other natural gas liquids to wholesale buyers, brokers and other refiners. He will also be responsible for the development of markets and the sale of these products outside of areas assigned to the company's sales divisions.

A pioneer in the engineering and sale of liquefied petroleum gas, Mr. Jamison formerly was assistant to the general sales manager, special products. He has had a quarter of a century of experience in all phases of L. P. gas sales and engineering.

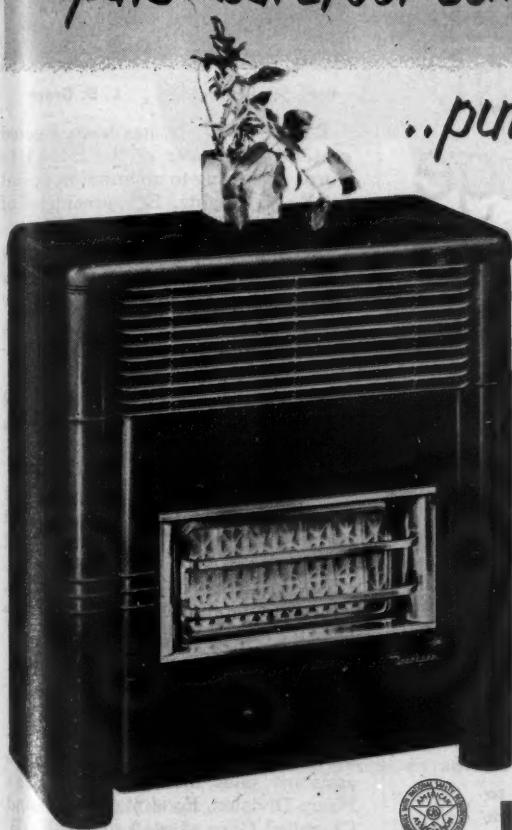
Coleman Co.

The Coleman Co. of Wichita, Kan., manufacturer of home heating, air conditioning and camping equipment, announces the establishment of two zone sales offices—one in Philadelphia to serve 11 eastern states and

Dearborn

AREA HEAT

puts "barefoot comfort" in any home



If you want help in mapping your Area Heat sales drive, or if you need more detailed information on Area Heat, write, wire or call. Be sure you take full advantage of this tremendous sales opportunity!

REGIONAL SALES OFFICES:

- Merchandise Mart, Dallas, Texas
- 5830 North Pulaski Road, Chicago, Ill.
- 513 Glenn Building, Atlanta, Ga.
- 303 Merchandise Mart, Kansas City, Mo.
- 3625 South Grand Avenue, Los Angeles, Calif.
- Merchandise Mart, San Francisco, Calif.



..puts EXTRA SALES DOLLARS
in your pocket!

When you tell your customers how easy it is to have "barefoot comfort" in their homes, they'll go in a big way for Dearborn Area Heat! And when you sell Area Heat, you're stuffing your pockets with extra sales dollars! For Area Heat sales are *multiple sales*—not just a single Dearborn Heater, but 3 to 6 heaters per sale, each equipped with a Dearborn Automatic Control.

Area Heat is a sure-fire profit-maker if you build a fire under your sales force. There'll be plenty of national advertising to back you up: ads in *Saturday Evening Post*, *Better Homes and Gardens*, *Holland's Magazine*, *Sunset*, and *Small Homes Guide* and other top magazines—all selling Area Heat.

Don't waste time or you'll be wasting profits. Get busy now planning your Dearborn Area Heat promotion. Then plan on the biggest sales year in your history!

Dearborn STOVE CO.

1700 WEST COMMERCE ST. • DALLAS, TEXAS

the District of Columbia and one in Dallas to serve 12 southern and southwestern states.

Carl L. Burrows, vice president in charge of sales, said the new offices were an important part of an expansion program designed to expedite the company's service to distributors of Coleman heating and air conditioning equipment and their dealers. In all, he said, four zone operations are being established—one having been recently opened in Chicago and one to be opened in Omaha, Neb.

L. L. White, formerly manager of Coleman's Philadelphia branch, has

been named eastern zone manager. Associated with him are Max M. Knight, A. A. Courtney and Alden E. Olander as regional sales managers and N. L. Kane and L. W. McInister as field service engineers.

Lawrence T. Ash, formerly a field director with the company's gas utility division, replaces Mr. White as manager of the Coleman branch office and warehouse in Philadelphia. O. S. McCollum is assistant manager.

Effective August 15, both the eastern zone and Philadelphia branch operations will be based in a new industrial building at 133-143 W. Hunt-

ing Park Drive in northeast Philadelphia.

Zone manager of the southern office is Hascal Simmons, with headquarters in the Merchandise Mart in Dallas. His staff includes Harold E. Wallof, Robert Lyda and Ivan Adkisson as regional sales managers and Irving Paef and Dean Snyder as field service engineers.

Stiglitz Corp.



E. N. Stiglitz, Jr.

L. D. Grant

E. N. Stiglitz, Jr. has been elected secretary-treasurer of the Stiglitz Corp., according to an announcement by E. N. Stiglitz, Sr., president of the company.

Mr. Stiglitz, Jr. has been associated with the company in product development and production. In his new position he succeeds W. G. Stiglitz, Sr., who sold his stock in the company and retired from the business.

Mr. Stiglitz, Sr. also announced that L. D. Grant of Chicago, Ill., has been named general sales manager. Mr. Grant comes to the Stiglitz Corp. with 22 years experience in sales and sales management. During the past three years he has been associated with General Air Conditioning Corp. of Los Angeles, Calif., as sales manager. Prior to that he was sales manager for Marquette Appliances, Inc.

Peerless Pump Division

Announcement is made of the appointment of Everett W. Lundy to assistant sales manager, Peerless Pump Division, Food Machinery and Chemical Corp., Los Angeles, by B. A. Tucker, general sales manager. Mr. Lundy, previously Pacific district manager for the pump firm, will be succeeded by Robert H. Hull, presently Peerless' Central district manager at Indianapolis, Ind. Mr. Hull, in turn, will be succeeded by Waldo T. Harman, Peerless' Chicago branch office manager.

Mr. Lundy attended the University of California at Berkeley, class of 1925. Since graduation he has been identified in sales work with various manufacturers of engineered prod-

no.1 specialist in storage



Sometimes, it's
better to be a
little nuts - like
the squirrels . . .

They know all
about storage, and if
you've got a problem
in storage for gas,
ole "Smoky" Billue
has the right deal
that saves you time
and money.

LPG Underground Storage

SAFE . . . from fire hazard—SAFE . . . from
explosions—SAFE . . . from sabotage

LOW INVESTMENT . . . costs less than one-sixth of
steel pressure vessels.

ECONOMICALLY SOUND . . . will allow plant to
operate at full capacity at all times, thus fully utilizing plant
investment.

These reservoirs are in daily commercial use as working
storage parallel to, or replacing steel surface storage.

Underground Storage is the only proven system of low
enough investment to permit storing L.P.G. during off-
market seasons to sell during peak demand and price season.

Write for list of
successful installations

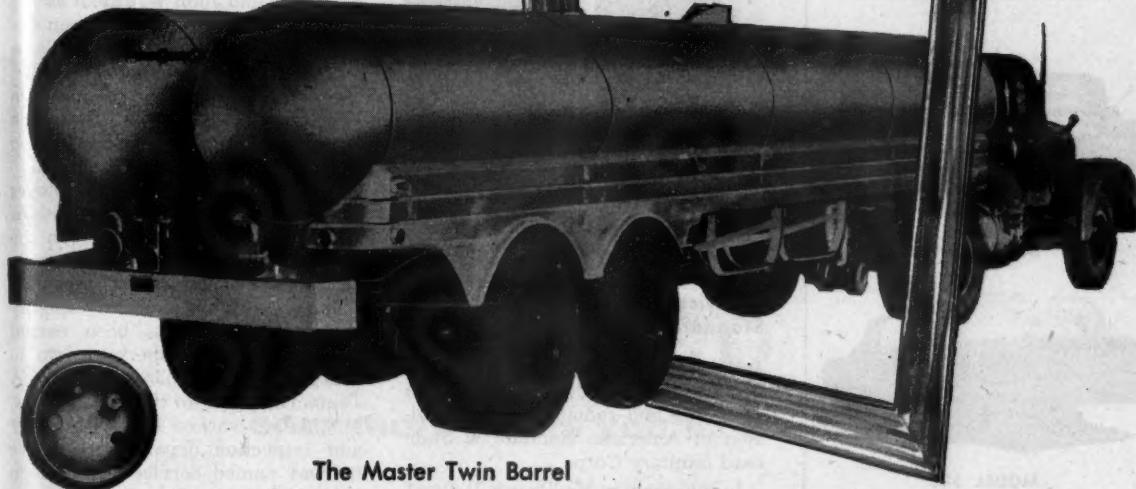


**SECURITY UNDERGROUND
STORAGE COMPANY**

Phone 2-4067

615 SUNSET DRIVE WICHITA FALLS, TEXAS

Master pieces in Steel Construction*

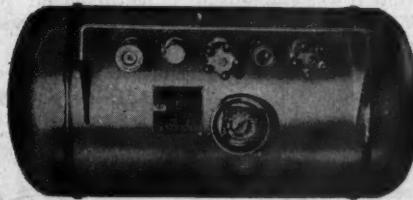


The Master Twin Barrel

For more load capacity and more profits on each trip, this Twin Barrel-Giant has been fabricated of light weight, high tensile steel. This unit with a 6,000 gallon capacity is one of many standard items on our production line. We also handle custom production.



200-LB. PROPANE
CYLINDERS
200-Lb. Working
Pressure: A.S.M.E.
Code Construc-
tion. 58 Water
Gallon Capacity.



FUEL SYSTEMS

Stock items range from 15" diameter by 31" long with 20-gallon capacity through 24" by 60" long with 103-gallon capacity. Special sizes on request.



DOMESTIC SYSTEMS

Only one of our many tanks. A new 500-gallon Propane tank that meets all demand requirements. Compact fitting arrangement for liquid withdrawal in top and bottom. Many other sizes of Butane and Propane Tanks for above or underground. Meets all Code Requirements.

**Every Master tank
is a Master Piece
of Construction*



Phone, write or wire your
requirements

Also Storage Tanks, Truck Tanks, Refin-
ery Equipment, Anhydrous Ammonia
Vessels, Large Diameter Line Pipe.

P. O. Box 5146 • DALLAS, TEXAS • Phone PROSpect 2441

OCTOBER, 1953

New Lower Prices on Propane Delivery Units



MODEL 100



MODEL 300

**Prices Shown Below
Include Truck and Tank
Piped Complete**

Specifications: New 1953, heavy duty 2 ton Chev., 2 speed axle, 825, 10 ply rear, 750 front tires; Nor-Tex propane tank as pictured above; pump, piped complete with 2" strainer, heavy duty valves and fittings; 50 ft. filler hose; tanks painted; clearance lights, ready to use.

MODEL 100

1320 W.G.	1400 W.G.	1600 W.G.	1600 W.G.
single	twin	single	twin
\$3,795.00	\$3,845.00	\$3,995.00	\$4,020.00

MODEL 300

Add \$300.00 to the above prices.

We can furnish any make or model meter, pump, propane carburetion, fire extinguisher, etc. Any size single or twin barrel tank from 600 W.G. to 2,000 W.G. available, with or without truck or piping. We can save you money on any make or model truck, new or used.

**PRICES INCLUDE ALL TAXES
BUDGET FINANCING AVAILABLE
AT 5% INTEREST**

Buy your truck from a dealer who is in the gas business and KNOWS WHAT IT TAKES to equip a truck properly, and SAVE YOU MONEY.

IMMEDIATE DELIVERY

Call collect,
phones 570 or 686
Preston W. Grace

**WHITE RIVER
DISTRIBUTORS, INC.**

Batesville, Arkansas



ucts, associating himself with the Peerless Pump organization in 1940. Successive promotion from sales engineer to branch office manager at Phoenix to Pacific district sales manager is now climaxed with his appointment to the newly created position of assistant divisional sales manager.



R. W. Lear



R. W. Williams

American Radiator and Standard Sanitary Corp.

Robert W. Lear has been appointed general marketing manager of the plumbing and radiator heating division of American Radiator & Standard Sanitary Corp.

In this position Mr. Lear will direct all staff sales activities for the division, including advertising, promotion, sales planning and market development, according to the announcement made by D. D. Couch, vice president, sales.

At the same time it was announced that Robert W. Williams has been appointed advertising and sales promotion manager, succeeding Mr. Lear.

Mr. Lear began his association with American-Standard in 1947 as a member of the advertising and sales promotion department. He was named assistant manager in 1949 and promoted to manager in 1950. He is a graduate of the University of Colorado and the Harvard Graduate School of Business Administration.

Mr. Williams is a graduate of the University of Nebraska and has had extensive experience in marketing and advertising in the hard goods field.

Headquarters of both men will be in the Pittsburgh offices of the company.

Tappan Stove Co.

J. S. Prewitt, Tappan Stove Co.'s territory manager in Philadelphia for the past five years, has been assigned to the company's special products division, according to an announcement made by A. B. Ritenthaler, vice president in charge of sales.

D. T. (Tom) Webster has been

named manager of L. P. gas and utility sales for Tappan it was also announced.

Mr. Webster started with Tappan in 1936 as a territory manager and in 1938 was promoted to district manager of Tappan's southeastern sales district. Since 1951 he has devoted his time to Tappan's utility sales.

Other appointments include John A. Spence and John W. Taylor as territory managers for the Tappan Co.

Mr. Spence will manage a new sales territory in central Texas. Mr. Taylor will represent Tappan in Washington and Oregon. Both men joined the Tappan sales organization in July.

Three veteran Tappan employees have been promoted to new positions with the firm, according to an announcement made by W. R. Tappan, vice president and general manager.

John F. Mabee, formerly quality control manager, has been named assistant plant superintendent in charge of range manufacturing. A Tappan employee for the past 21 years, Mr. Mabee worked in the assembly and inspection departments before he was named service manager in 1940. He was appointed quality control manager in 1942. B. L. Hower, assistant superintendent, will concentrate on production, purchasing and defense work.

The new quality control manager is Fred G. Constance, formerly service manager. Replacing Mr. Constance as service manager is Philip Stehle, Jr.

Affiliated Gas Equipment, Inc.



Appointment of Ronald N. Campbell as assistant to the president was announced by Lyle C. Harvey, president of Affiliated Gas Equipment, Inc., Cleveland, Ohio.

In his new position, Mr. Campbell will devote himself to the coordination and planning of Affiliated Gas Equipment's production including the Bryant Heater Division, Payne Division, and Day and Night Division.

He comes to AGE after five years' service as vice president in charge of manufacturing for Landers, Frary & Clark, New Britain, Conn., manufacturers of Universal products.

Previously, Mr. Campbell was associated for more than 20 years with the Carrier Corp., rising from his first job as a plant mechanic to the post

Second Chance

because you asked for it again



UNITED

once more offers you its exclusive

Forecaster Service

to help you plan ahead and get ahead

WHAT IT IS:

United's "Forecaster Service" is a method we've developed to help you *accurately predict* your needs and your business growth for the coming year. We work it out with you *right in your own office*—no delays, no elaborate reports or special systems required.

WHAT IT DOES:

"Forecaster Service" gives you a picture in advance of your probable requirements throughout the year. You'll get a separate chart showing your expectable volume in each class of supplies: bulk gas, storage systems, hoods and stands, meters and so on. These growth-trend predictions will be of real value to you in planning ahead, in contract purchasing and in cost control.

HOW YOU GET IT:

If you operate a bulk plant business, and have kept records of your receipts of gas and equipment during the past three years or more, "Forecaster Service" can go to work for you. Just ask your UNITED service representative about it next time he calls. Or write us to send a representative to see you: no obligation.

• IT PAYS 10 WAYS TO DO BUSINESS WITH UNITED!

UNITED PETROLEUM GAS CO.

806 Andrus Building • Minneapolis, Minnesota

SALES REPRESENTATIVES IN:

Clinton, Mississippi • St. Louis, Missouri • Centerville, Ohio • La Crosse, Wisconsin

Houston, Texas • Midland, Texas • Minneapolis, Minnesota

of assistant works manager of the firm's Syracuse, N. Y., operations. From 1946 to 1948 he managed the Jackson, Mich., operations of the Silent Automatic Division, Timken Detroit Axle Co.

A. O. Smith Corp.

George P. Hough of Chicago has been appointed general manager of the Permaglas-Heating Division at Kankakee, Ill., it is announced by F. S. Cornell, vice president and gen-

eral manager of the A. O. Smith Corp.

Mr. Hough fills the post vacated at Kankakee several months ago by Mr. Cornell when the latter moved into the top management staff at Milwaukee. In the interim Mr. Hough has served as chairman of an operating committee which administered the big water heater plant.

He continues his duties as an assistant to the president of A. O. Smith in the North Central region, the office of which is at Chicago.



W. W. Stake

The Permaglas-Heating Division of A. O. Smith Corp., Kankakee, Ill., has created a number of basic organizational changes designed to help it gain a larger share of available markets in the coming year, according to general sales manager S. E. Wolkenheim, who made the announcement at a recent marketing conference of the field sales staff in Kankakee.

Walter W. Stake, who was the eastern district sales manager at New York, has been named assistant general sales manager of the Permaglas-Heating Division and will continue to make his office in New York.

New district sales managers by areas are as follows: Northeastern District, W. T. Halket, Springfield, Mass.; Eastern, W. A. Dunn, Teaneck, N. J.; Mid-Atlantic, H. N. Johnson, Philadelphia; East Central, Kenneth O'Gorman, Pittsburgh; South-Eastern, Wendell Fields, Jr., Atlanta, Ga.; Mid-West, G. C. Spratt, Lafayette, Ind.; North Central, L. H. Hoelter, Chicago; Central, R. J. Ulvestad, Kansas City, Mo.; Southwest, J. W. Burleson, Dallas, Texas, and Western, H. L. Bilsborough, Los Angeles.

All water heater sales, Permaglas and Burkay, have been consolidated under the direction of R. J. Shepherd, manager, assisted by D. D. Williams. Home heating boilers have been added to heating sales under the management of Jack Robinson.

Motorola, Inc.

Eugene S. Goebel, national sales and service manager of Motorola Communications and Electronics, Inc., recently announced the promotion of Frank W. Walker to the position of regional sales manager. The newly created sales region which Mr. Walker will head is composed of southern California, Arizona and southeastern Nevada. Offices will be in Los Angeles.

A former zone manager for the state of Michigan, Mr. Walker has been with Motorola for five years. Previous experience includes 10 years as chief communications engineer for the Michigan State Police, followed by three years as chief engineer for the Greyhound Corp., where he was responsible for the design and installation of the first cross-country bus radio network in the nation.

Enterprise

Features that
make the
Enterprise
your BEST-
SELLING
GAS RANGE!

ENTERPRISE SELLS
FOR UP TO \$75 LESS!

"Price is pretty important to most of us nowadays. When we get ready to buy a range, we're going to spend a little time looking and comparing. And we'll end up buying the range that offers the most for the money we have to spend. Chances are they'll buy Enterprise, Mr. Dealer . . . if you'll take time to show them the many work-saving features of the new Enterprise . . . plus the price tag that's up to \$75.00 less than other name brands. Because Enterprise gives them most



for the money they have to spend.

And remember: when you sell Enterprise, you sell guaranteed merchandise that won't come back . . . to a customer who will!

An Enterprise for every kitchen, too . . . 16 electric, 33 gas models.

Model 372385 Cp-Clock
Controlled. Waste-high broiler
... giant oven . . . additional
low broiler.



WRITE TODAY for free catalogue

Serving a value-conscious America for nearly 100 Years.

PHILLIPS & BUTTORFF MANUFACTURING COMPANY
NASHVILLE, TENNESSEE

COLUMBIAN

BUTANE-PROPANE

Transport Trucks • Semi-Trailers • Storage Tanks



(Above) 4,000-gal. (4,848 water gal.) Double-Barreled L.P. Transport.—L.F.T. Mack Truck

EXPERTLY DESIGNED — QUALITY BUILT



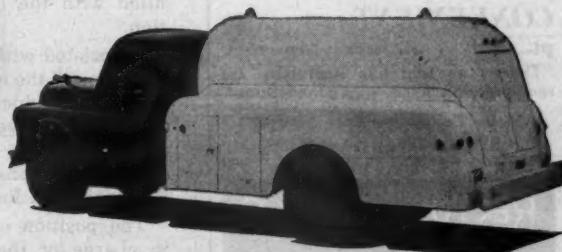
(Above) 1,463-Gal. (1,774 water gal.) Twin Tank Truck.

One of the first in the field, Columbian has won recognized leadership in the building of Butane-Proppane transportation, delivery and storage equipment. With 60 years of tank building experience behind us and a reputation for advanced design and engineering excellence, Columbian offers you today's "smart buy" in modern Butane-Proppane Transport Trucks and Semi-Trailers—manufactured in any capacity you need—engineered to meet limitations of your state regulations.

Columbian Underground and Above-Ground Storage Tanks —
are available in all sizes. All are A.S.M.E. tanks.



(Below) Columbian Full Skirted LP Delivery Truck. Pump mounted with direct driven power take-off. Outlet control valves may be furnished in curb side or rear cabinet. Print-o-meter also in rear cabinet.



WRITE NOW for complete information about Columbian Butane-Proppane transportation, delivery and storage equipment.

COLUMBIAN STEEL TANK CO., P.O. Box 4048-C, Kansas City, Mo.



Preferred!

RECTORSEAL #2

Butane dealers throughout the nation are demanding Rectorseal #2. They have found it to be the finest thread sealing compound available . . . and here's why.

ACCEPTED

by Texas, Mississippi, Alabama, Oklahoma, Louisiana and LP-Gas Commissions of many other states as a thread sealing compound for LP-Gas piping connections. In addition, it meets the requirements of AGA and the National Board of Fire Underwriters, Pamphlet #58.

INSOLUBLE. Rectorseal #2 won't dissolve or thin out in LPG, natural or manufactured gas, anhydrous ammonia, freon or water.

THIN IN CAN for economical, easy application.

THICK IN JOINT for positive seal for life of connection.

NEVER HARDENS, cracks, crumbles or gets brittle.

SMOOTHER. No lumpy ingredients—no stirring. Same consistency from top to bottom of can.

CLEANER. Light color won't soil—easily wiped off hands, appliances, etc.

NO WASTE. Brush reaches bottom of can—no wasted Rectorseal.

CONVENIENT in 1 pt., ½ pt., and ¼ pt. brush-top cans. "There's no seal like Rectorseal for seal-proofing L. P. gas connections."

Write Today for Free Sample
RECTORSEAL, Dept. "A"
2215 Commerce St.
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RECTORSEAL # 2

MAKING THE L-P GAS INDUSTRY SAFER

Rockwell Manufacturing Co.



Richard F. Dean

Richard F. Dean has been appointed supervisor of Rockwell Manufacturing Co.'s employee relations and training program. W. F. Rockwell, Jr., president, has announced.

Mr. Dean, former assistant to

the training director in the Central staff of the industrial relations department of Koppers Co., Inc., served as special consultant to industries and business organizations in New York state on personnel and training problems in connection with a program administered by the extension division of Cornell University. Earlier, he was engaged in the banking business for 17 years with Chase National Bank of New York City.

Mr. Dean will work on the staff of E. F. Foubert, manager of industrial relations.

The Coleman Co.



J. F. Warren



R. T. Hansen

Julian F. Warren, formerly sales manager of Delco Appliance Division of General Motors Corp., has been named merchandise manager, according to an announcement by C. L. Burrows, sales vice president.

Under Mr. Warren's direction, the new department will develop merchandising policies, plans and programs for all lines of Coleman products and will operate in close cooperation with the field sales organization.

Associated with Mr. Warren in the operation of the new department will be three product managers responsible for the development of marketing information and merchandising recommendations on the Coleman Co.'s principal lines.

The position of product manager in charge of the merchandising of Coleman open market appliances, chiefly lanterns, camp stoves and

trailer coach equipment, will be Ford Denslow.

Robert T. Hansen has been named product manager for central heating and air conditioning.

A third product manager in charge of merchandising plans and policies for floor and wall furnaces, space heaters and water heaters will be appointed soon.

Also to be announced is the appointment of a sales training supervisor who will direct and coordinate all phases of sales training at factory, distributor and retail levels.

Bastian-Blessing Co.



R. E. Poethig

Robert E. Poethig, director of research and development for the Bastian-Blessing Co., Chicago, will head the company's newly consolidated department of research and production engineering. E. N. Krein,

vice president and works manager of the company, manufacturers of L. P. gas (butane-propane, bottled gas) equipment, made the announcement recently, after E. V. Rupp, in charge of production engineering for the past six years, resigned to accept a position in another industry.

Mr. Poethig, associated with Bastian-Blessing since 1939, is well qualified to preside over the combined departments with his long service on many industry committees. A former board member of the Liquefied Petroleum Gas Association, he has served as chairman of the LPGA's technical and standards, educational and safety committees, and is currently a member of the safety relief valve manufacturers' committee of the American Petroleum Institute.

L. J. Mueller Furnace Co.

Mr. Harold P. Mueller, president, has announced the appointment, by the board of directors at their recent meeting, of Mr. E. J. Ovshak as secretary of the L. J. Mueller Furnace Co., the makers of Mueller Climatrol.

Ovshak joined the company seventeen years ago, and has served in the accounting department. He has been the assistant secretary for the last 12 years. Previous to joining the company, he was associated with the Marshall and Islay Bank of Milwaukee as an external auditor.

Mr. Ovshak is a member of the Wis-

a
new high
in heat
efficiency

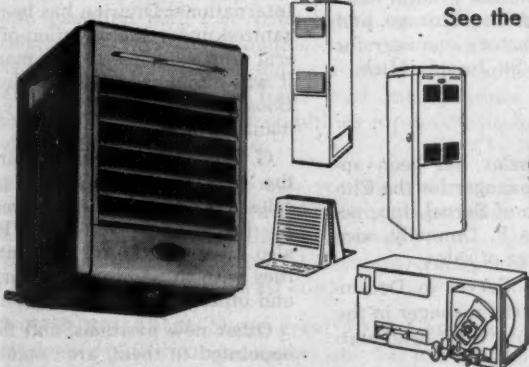


UTILITY'S MODEL 50 UF UNIT HEATERS

Here is the perfect answer to problem situations where high heating power is demanded, but where the heating unit must be both compact and attractive. Only 23 inches high, Utility's Model 50 UF Unit Heater can be fitted into the smallest areas...yet it delivers 50,000 BTU.

Its low 24-voltage control makes quick and economical installations possible by eliminat-

ing the necessity for line voltage thermostat leads. Ceramic coated heat exchanger, built-in fully automatic fan control; and summer switch provides air circulation for warm weather ventilation. Designed to become an attractive addition to any store or office, Utility's Model 50 UF Unit Heater is the perfect choice for efficiency, ease of installation, low cost, and freedom from service problems. AGA-approved.



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Please send me free information on:

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- Utility Cooling Equipment
- Utility Automatic Gas Water Heaters

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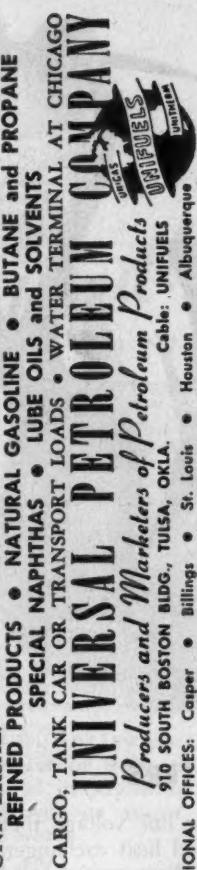
UTILITY APPLIANCE CORP.

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MANUFACTURERS OF GAFFERS & SATTLER AND OCCIDENTAL AUTOMATIC GAS RANGES • UTILITY AUTOMATIC GAS HEATING EQUIPMENT • UTILITY AUTOMATIC GAS WATER HEATERS • UTILITY AIR COOLERS AND BLOWERS

A SIGN OF PERFECT BALANCE

Universal's emblem is a sign of balance, adjusted by a keen sense of proportion and a desire to attain and preserve harmonious customer relations. And since we both produce and market "everything done in oils" your source in our universe is UNIVERSAL.



REFINED PRODUCTS • NATURAL GASOLINE • BUTANE and PROPANE

SPECIAL NAPHTHAS • LUBE OILS and SOLVENTS



consin Society of Certified Public Accountants and an alumnus of the University of Minnesota.

Also announced was the appointment of Mr. Robert F. Hume as assistant secretary of the Mueller Co.

Mr. Hume joined the company, one of the oldest and largest in the heating and air conditioning industry, on March 15, 1946, upon his discharge from the Navy. He began as a trainee and has spent some time in practically every department of the company. In addition he has served as a sales representative and the Milwaukee service manager before joining the purchasing department.

He attended the University of Wisconsin and Dartmouth.

Florence Stove Co.



J. P. Wright

was made by R. H. Taylor, Florence president, who also stated that Mr. Wright becomes a member of the board of directors and will serve on the company's executive committee.

Mr. Wright's appointment is effective Sept. 1. He comes to Florence from Liquid Carbonic Corp., Chicago, where he was vice president, durable goods division. He is a former vice president and general manager of A. B. Dick Co., Chicago, and previously was factory manager for Whirlpool Corp., St. Joseph, Mich.

Servel, Inc.

Carroll J. Tresslar has been appointed general manager for the Chicago sales branch of Servel, Inc., according to James F. Donnelly, vice president in charge of sales.

Tresslar joined Servel in December, 1952, as a district manager in the Midwestern region with headquarters in Chicago.

Prior to joining Servel, he was associated with R. M. Karet & Associates, Chicago, manufacturers' representatives; general manager of the Kentworth Distributing Corp., Louisville; general manager of the Chicago branch of the Philco Corp., and wholesale salesman in Chicago for

Stromberg-Carlson, Zenith and General Electric.

Servel's Chicago sales branch, located at 333 West Lake St., distributes the company's home appliances in 17 counties of northeastern Illinois and in Lake County, Indiana.

Calcinator Corp.



Don Davidson

Don Davidson has joined Calcinator Corp., Bay City, Mich., manufacturer and national distributor of incinerator equipment, as sales manager, effective September 1, it was recently announced by John W. Herbert, president. Since April, 1950, Davidson has been sales promotion manager of the dryer and ironer divisions of Whirlpool Corp.

Well known in the major appliances industry with which he has been connected since graduation from the University of Illinois in 1938, Mr. Davidson at one time headed his own sales merchandising organization, Midwest Associates, in Aurora, Ill. He has also held sales positions with Hamilton Manufacturing Co., Two Rivers, Wis., and Forster Distributors, Minneapolis.

U. S. Rubber Co.

In order to provide even greater customer service, and to develop more specialized selling techniques for today's markets, the sales department of United States Rubber Co.'s International Division has been reorganized under the direction of a general sales manager and six managers, it was announced recently by L. C. Boos, vice president and general manager of the division.

G. J. Russ has been appointed to the newly created post of general sales manager, and will be responsible for all sales activities. He will also integrate the department activities with those of staff departments and other divisions of the company.

Other new positions, and the men appointed to them, are: manager of branch sales, A. N. Reeves; manager of distributor sales, R. J. Thomas; manager of head office sales and government sales, A. Eaton-Clarke; and manager of product departments, W. J. Mulvihill, Jr. J. T. Kuntz continues as manager of sales development, and H. L. Reynolds as manager of sales operating.



4 Powerful Reasons Why **CHEVROLET** ADVANCE- DESIGN **TRUCKS** work harder . . . work longer . . . work for less!

MORE POWER AT LOWER COST! You can look forward to sizeable savings on gasoline with Chevrolet trucks on the job. In heavy-duty models, the advanced Loadmaster engine with new high-compression ratio of 7.1 to 1 delivers more power than ever—and does it on less fuel! In light- and medium-duty models, Chevrolet's Thriftmaster engine combines top-notch performance, with rock-bottom operating cost.

TAILORED TO YOUR JOB! Of course you want a truck that fits the requirements of your particular job. And you get just that when you buy a Chevrolet truck! You get the *right* power . . . the *right* chassis units from tires to transmission. Chevrolet trucks are *factory-matched* to do your work at lowest cost!

RUGGED AND RELIABLE! These great 1953 Chevrolet Advance-Design trucks are built stronger to stay on your job longer! Frames, for example, are sturdier and more rigid. And you'll find extra strength in other vital places, too. The result is a truck that gives you extra miles and months of low-maintenance operation.

LOWEST PRICED LINE! You start saving money the moment you buy a Chevrolet truck. For, in addition to all its other advantages, Chevrolet is *America's lowest priced truck line!* Why not start saving now? Your Chevrolet Dealer will be happy to give you all the facts. . . Chevrolet Division of General Motors, Detroit 2, Michigan.

CHEVROLET ADVANCE-DESIGN TRUCK FEATURES

TWO GREAT VALVE-IN-HEAD ENGINES—the Loadmaster or the Thriftmaster—to give you greater power per gallon, lower cost per load. **POWER-JET CARBURETOR**—for smooth, quick acceleration response. **DIAPHRAGM SPRING CLUTCH**—for easy-action engagement. **SYNCHRO-MESH TRANSMISSION**—for fast, smooth shifting. **HYPOID REAR AXLE**—for dependability and long life. **TORQUE-ACTION BRAKES**—on light-duty and medium-duty models and on front of heavy-duty models. **TWIN-ACTION REAR BRAKES**—on heavy-duty models. **DUAL-SHOE PARKING BRAKE**—for greater holding ability on heavy-duty models. **CAB SEAT**—with double deck springs for complete riding comfort. **VENTIPANES**—for improved cab ventilation. **WIDE-BASE WHEELS**—for increased tire mileage. **BALL-GEAR STEERING**—for easier handling. **UNIT-DESIGNED BODIES**—for greater load protection. **ADVANCE-DESIGN STYLING**—for increased comfort and modern appearance.



Century Engineering Corp.

Henry G. Gabel is the new middle Atlantic district sales manager for Century Engineering Corp., Cedar Rapids, Iowa, according to recent announcement by W. S. Moellering, general sales manager.

Mr. Gabel will make Norristown, Penn., his headquarters and supervise sales for Century in eastern Pennsylvania, southern New Jersey, Delaware, Maryland, northern Virginia, northeast West Virginia and Washington, D. C.

John Wood Co.

Victor Mauck, chairman of the board of the John Wood Co., New York, announces that negotiations have been completed for the purchase of the Floyd-Wells Co., manufacturers of the line of Bengal gas and combination ranges, Royersford, Pa.

With the acquisition of the Floyd-Wells Co., the John Wood Co., and its Canadian affiliate have an integrated network of nine plants located in Conshohocken and Royersford, Pa.; Chicago, Ill.; Muskegon, Mich., and

St. Paul, Minn. Canadian plants are located at Toronto, Winnipeg, Montreal and Vancouver. These plants produce automatic water heaters, ranges, gasoline pumps, service station equipment, metal dairyware, tanks and storage vessels of various types.

The Floyd-Wells plant is located on the Pennsylvania and Reading lines a few miles north of the John Wood Co. plant at Conshohocken, Pa. It comprises approximately 300,000 sq. ft. of floor space.

Cargo-Guard Co.



Horton Conrad

Horton Conrad has been appointed field sales manager of Cargo-Guard Co., Thompson's Point, Portland, Maine, it has been announced by E. Martin Anderson, vice president and treasurer of the company. Mr. Conrad was formerly vice president of Brakemaster Corp. of Chicago, Ill., in charge of its national distributing program and will bring to Cargo-Guard his years of experience in working with distributors and dealers of automotive fleet products.

Mr. Conrad's headquarters will be in Chicago. He is a graduate of Dartmouth College, and has spent his entire business career in industrial sales.

Chambers Corp.



Guy T. Gunter Jr.

Guy T. Gunter Jr., Atlanta, has been appointed Southeastern representative for Chambers of Indianapolis and Shelbyville, Ind., pioneer gas range firm, according to A. H. Scheffer, sales manager.

Mr. Gunter, who will work from his home, 905 Woodland Ave., S.E., Atlanta, will handle both console ranges and built-in equipment. His territory will cover Alabama, central and eastern Tennessee, Georgia, Florida, and North and South Carolina.

These states were formerly part of the territory handled by M. A. Compton, Jr., who will headquartered in Houston and concentrate on Louisiana, Mississippi, Memphis, and southeast Texas.

INCREASE YOUR PROFITS WITH THE PHILGAS*

5-WAY PROFIT PLAN!



1. High Quality Product
2. Dependable Supply
3. Experienced Engineering
4. Effective Marketing Help
5. Operational Assistance

*Philgas is the Phillips Petroleum Company trademark for its high quality propane-butane LP-Gas or bottled gas.

PHILLIPS PETROLEUM COMPANY Sales Department • Bartlesville, Oklahoma

Offices located in Amarillo, Tex., Atlanta, Ga., Chicago, Ill., Denver, Colo., Des Moines, Ia., Fort Lee, N.J., Indianapolis, Ind., Kansas City, Mo., Milwaukee, Wis., Minneapolis, Minn., New York, N.Y., Omaha, Nebr., Raleigh, N.C., St. Louis, Mo., Tulsa, Okla., Wichita, Kan.

SALES

1950

1953

1950

1953

DEALER PROFITS



"PERFECTION"



The Most Important Reasons in the world for handling any product are simply (1) Will customers buy and be satisfied, and (2) Will it sell fast enough to make steady profits? With Perfection Propane Systems, the answer is a big "Yes!" on both counts. Dealer sales have steadily increased to the point where we've had to double our production facilities. You can be sure of satisfied customers since Perfection Systems are made by a company with more than 60 years experience in designing and building pressure vessels! Stock and sell BS&B Propane Systems for city home or farm use, or for small commercial installations.

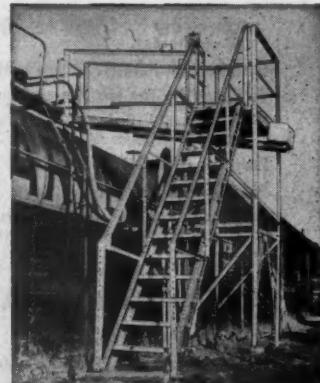
BS&B Unloading Rack

Here's another BS&B product that's sure to save money for LP Gas dealers — another reason why more dealers are switching to BS&B. Stops awkward unloading, makes walking sure and safe! New BS&B Unloading Rack reduces fire danger to a minimum ... needs only small space. Ladder or stairway located left side, right side or front as you specify. Loading rack folds out of way. Shipped knocked down, cut and marked for easy erection.



BLACK, SIVALLS & BRYSON, INC.

Propane Equipment Division Dept. 6-AB10
7500 East 12th Street Kansas City 26, Missouri



Cities Service Oil Co.

Harris Bateman, chief engineer for Cities Service Oil Co. and Cities Service Pipe Line Co., has returned to Bartlesville after completing a year's assignment with the Petroleum Administration for Defense as director of its materials division.

In addition to resuming the responsibilities of manager of the engineering division, his duties are being increased to include the activities of the purchasing, warehouse and surplus materials departments which are under the direction of purchasing

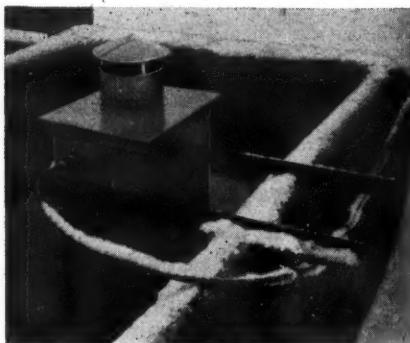
agents C. M. Taylor and H. D. Patridge.

B. D. (Tex) Leuty, who has been supervising engineering division operations as assistant chief engineer during Mr. Bateman's absence, has been appointed manager of pipeline transportation. He will be in charge of both wholly and jointly owned crude oil and products pipelines. Mr. Leuty will be assisted in the joint-venture operations by R. E. Roehl.

Harry Nelson will continue as manager of Cities Service Pipe Line Co., the wholly owned oil pipeline company.

BOOST YOUR CUSTOMER'S PROFITS THROUGHOUT THE WINTER WITH WARMER WATER FROM A JOHNSON AUTOMATIC LP-GAS STOCK TANK HEATER

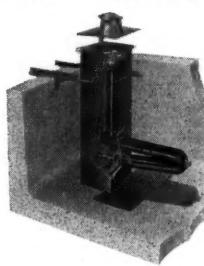
Here's the stock tank heater adaptable for any tank . . . concrete, wooden or steel. An LP GAS STOCK TANK HEATER means ICE-FREE water (see illustration at right) . . . instead of partially free water.



It has been proven that warm water increases beef gains and milk production . . . also cattle take less feed when warm water is available during winter months. The Johnson Water Warmer Automatic Stock Tank Heater will give you all of these advantages and will pay for itself in one season. It's completely dependable and has the type of automatic operation that means less work in caring for herds. Guaranteed completely free of condensate problems.

HERE ARE THE JOHNSON FEATURES WHICH MEAN MORE PROFITS FOR YOU

- Increased gas load. Average 600 lbs. per year per customer.
- Satisfied customers. Increased good will.
- Designed for the job. No condensate problem.
- Automatically maintains 48° water temperature in coldest weather.
- Stays lit.
- Easy installation.
- Recommended by leading distributors and merchandisers of bottled gas.



JOHNSON GAS APPLIANCE CO.

597 E. Avenue N.W.

Cedar Rapids, Iowa

Fifty Years of Quality Manufacture of Gas Burning Equipment

Whirlpool Corp.



Harry M. Kane

manager on special field assignments.

For the last three years, Mr. Kane has been Grand Rapids divisional manager for Bendix Home Appliances, South Bend, Ind. Prior to that he was a distributor salesman for Southern Appliances, Inc., Charlotte, N. C. He graduated from Ohio Wesleyan University in January, 1949.

Perfection Stove Co.

Marc Resek, formerly vice president of engineering, has become vice president in charge of all research for Perfection Stove Co., Cleveland.

W. H. Haag is now vice president of manufacturing, engineering and purchasing. He had previously headed up the manufacturing and purchasing divisions.

W. M. Day, chief engineer, has been placed in complete charge of the engineering department.

Raybestos-Manhattan, Inc.

J. H. Matthews was appointed executive vice president of Raybestos-Manhattan, Inc. at a recent meeting of the board of directors.

Mr. Matthews was graduated from Stevens Institute of Technology and started with the Manhattan Rubber Manufacturing Co. in 1914. He was appointed assistant factory manager of the Manhattan Rubber Division in 1940, became director of the company and assistant general manager of the division in 1942. In 1947 Mr. Matthews was elected a vice president of Raybestos-Manhattan, Inc.

C. Reginald Berry

C. Reginald Berry, 54, president of the Natural Gas Co. of Virginia, died September 1 at his home in Richmond.

Mr. Berry became co-owner of the bottled gas firm after working for many years with the Virginia Gas Distribution Corp. in Staunton, Va. He was well known in the LPG industry of that state.

WHEN YOU BUY

BURNHAM

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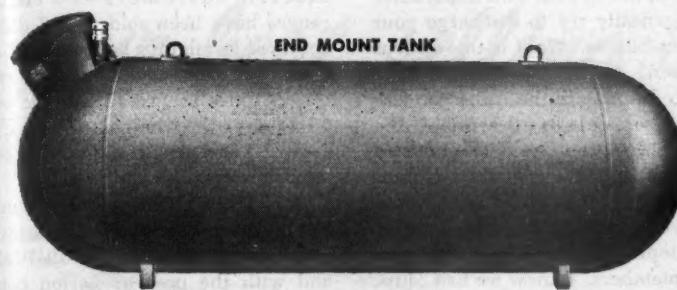
Quality

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Safety

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Service



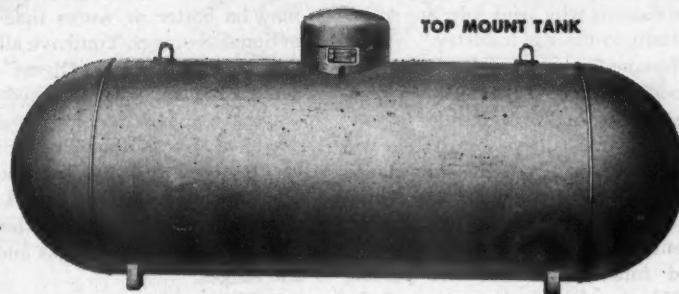
AND YOU CHOOSE FROM A COMPLETE LINE OF 17 STANDARD SYSTEMS FROM 250 TO 1000 GALLONS

BURNHAM LPG TANKS

Extra Quality—The quality of Burnham tanks goes substantially beyond the ASME requirements for construction. All our tanks are registered with the National Board.

Extra Safety—The new lifting lugs on Burnham tanks are designed for super-safe handling. They will carry 20 times the weight of the system according to a U.S. Testing Laboratory Report. Rigid collars welded to tanks safeguard controls without hampering accessibility. All tanks hydrostatically tested to double the working pressure under National Board inspection.

Extra Service—The eduction and fill pipe is screwed into the multi-valve for easy removal when cleaning or replacement are required. Both fixed-level and float guages are supplied for users convenience although only one is required by the Underwriters' Laboratories. All tanks are completely dehydrated and shipped moisture free.



ALSO COMPLETE LINE OF
ANHYDROUS AMMONIA AND
TRUCK TANKS AVAILABLE.



Burnham Corporation



TANK DIVISION
Irvington, New York



C. E. Cloud

The Responsibility of the Gas Service Man

By C. E. Cloud

President, MidSouth Gas Co.
Little Rock, Arkansas

THERE have been a great many words* written and spoken about this subject, "The Responsibilities of the Gas Service Man." Inevitably, some of the things I will say will be repetitious, but I will attempt at least to modernize it to the extent of what is happening to our industry today, and let me say here that there have been many—a great many changes—since this group assembled here last year.

Some of the things about which I wish to speak will not be particularly pleasant to contemplate. They will, however, point up the reasons why your jobs are so important to the industry. Let me beg each of you here and now to accept and believe this statement, which bears repeating: "They will, however, point up the reasons why your jobs are so important to the gas industry."

I know it may be difficult for you, especially those of you new in service work to realize, and quite believe me or your supervisors, when we talk with you about the importance of your job. Remember the Christopher Society and the basic fundamental upon which it is organized and functioning—that one person, YOU, can change the course of the world. I know you have all heard and read concrete examples of just that very thing. Apply that principle to your daily work, I beg of you.

Now, why have I gone to such lengths to try to get you to accept the truth of the statement that you do have responsibilities and that those responsibilities are of great importance to your companies and to the gas industry? The reason I have, is that I must sell you that idea and have you firmly believe it if anything I have to say does any good. The situation facing our industry today is so serious that you as individuals

must believe in your own importance and earnestly try to discharge your responsibilities. What is this serious situation?

Only last month the American Gas Association released a report, the "Action Program for Gas Industry Development." It contained a thorough study of the gas industry's competitive position and a plan of action for adoption by its operating company members. I knew we had cause for alarm but didn't fully realize the gravity of the situation.

Before I present at least a part of these recommendations, I want to read you some statistics which comprise a great part of the cause for alarm. You know you can't always depend on statistics either. The situation in your own area or company may be better or worse than these national averages. You have all probably read in "Readers Digest" about the statistician who drowned while wading a creek that averaged four deep feet. I wish it were never necessary to read statistics because they are fundamentally dry, but I know of no other way to tell you the facts.

Now, let's talk about gas and electric ranges:

1. Using the saturation of urban gas ranges and electric ranges in 1940 as a base, in 1950, 10 years later, electric ranges had a saturation index of 140. Gas of 97. In other words, in 10 years between 1940 and 1950, according to the U. S. Census, the electric utilities have increased their range saturation to 140% and gas has decreased to 97%.

2. Let's put it another way and get another look at the situation. From 1939-41, being the pre-war period, to the 1947-51, post-war period, for every 130 new gas customers—123 gas ranges have been sold. However, for the same period, for every 142 new

electric customers—281 electric ranges have been sold. No, I didn't get those last figures backward. Electric range sales have been at a rate of 4½ times as fast as electric customer growth, whereas gas range growth has been less than gas customer growth!

3. Now, how about refrigerators? For the same pre-war and post-war periods of 1939-1941 and 1947-1951, and with the pre-war period being the base of 100, the post-war period index has changed to 130 gas customer growth, but the gas refrigerator growth index is only 103. Observe the difference. Gas customer growth increased from 100 to 130, but gas refrigeration customers only from 100 to 103. What have the electric boys done on this same basis? From 100 to 142 on customers and from 100 to 170 on electric refrigerators. No, again I didn't get the figures backward—the electric index on customers was 142 and on refrigerators 170. In other words, they are gaining refrigerator load much faster than customers, whereas, gas is just barely holding its own pre-war rates. What does this amount to? Just this. Sales growth of electric refrigerators is currently 23 times faster than gas refrigerators. Another way of sizing up the trend:

In 1940, 10% of gas customers used gas refrigeration.

In 1950, 11% of gas customers used gas refrigeration.

In 1940, 63% of electric customers used electric refrigeration.

In 1950, 86% of electric customers used electric refrigeration.

Now, what does the fact that on an index basis, electric ranges are selling 4½ times as fast as gas and elec-

*Address given at Gas Appliance Short Course, Tulsa, Okla.

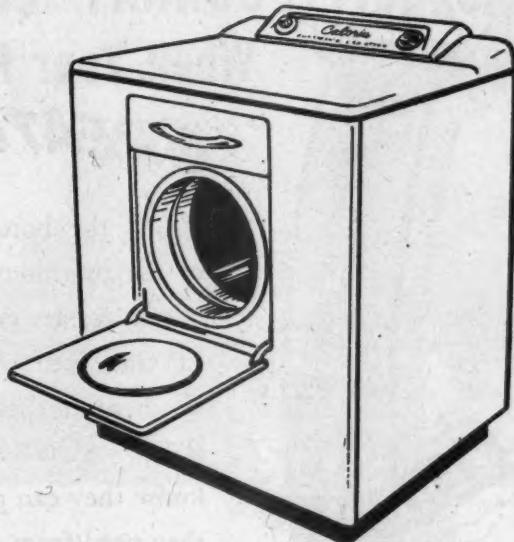
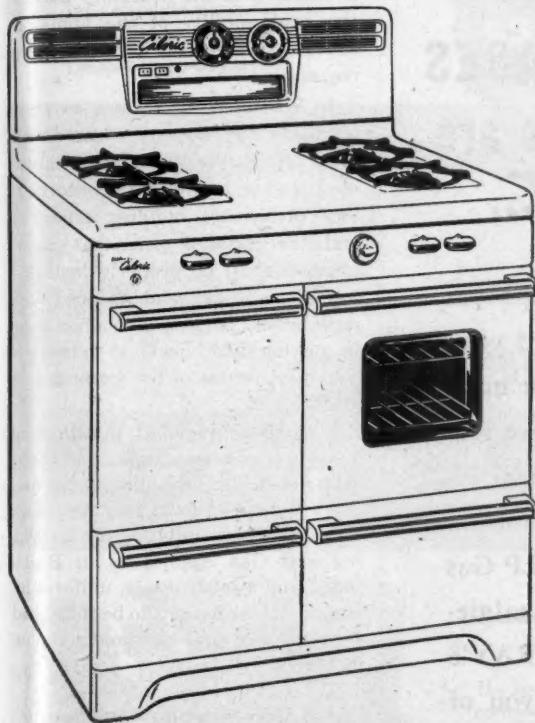
BIG SALES ADVANTAGES

that make

CALORIC

GAS RANGES AND DRYERS

your best-selling bet for Fall



1. A king-size profit . . . for you make **MORE** when you sell CALORIC, direct from the factory with *no distributor costs to cut your take*.
2. Only **one** pricing policy—the same for *all* dealers. CALORIC is always priced right. It's a deal for *every dealer every time you buy*.
3. An extra-liberal CALORIC financed floor plan which enables you to become a CALORIC dealer without over-extending yourself.
4. Fifty-two warehouses, located throughout the country, mean speedier delivery...faster service . . . no back-breaking inventory worries.
5. The heaviest concentration of sustained advertising in the entire gas range industry—and it's getting bigger all the time.
6. A new merchandising and point of sale program designed to help **YOU** make the most of CALORIC features and customer benefits.
7. Best of all, you've got the famous name CALORIC on a line of products that housewives know from experience are quality through and through.

Cash in on all of these 7 selling advantages. Sell the modern, automatic gas ranges and dryers that give your customers the greatest value—*give you the greatest profits*.

Start selling Caloric today!

Caloric® STOVE CORPORATION, TOPTON, PA.

tric refrigerators 23 times as fast as gas, have to do with you gas service men? Plenty—33½% of AGA's recommendations deal with appliance servicing. That is, five of the 15 recommendations which AGA has made as a means of combating the situation deal with appliance work.

The AGA recommends:

1. To inform the customers regarding the extent and character of the appliance servicing which the utility is currently prepared to render. "Don't keep service policy a secret!"

2. To provide, upon customer's request, prompt and efficient appliance adjustment service, preferably with the cost of such service included in operating expenses to the extent reasonable and practicable. This service should be rendered to all gas appliances meeting prevailing minimum standards of safety, without distinction as to appliance warranty or point of purchase; provided that, in the judgment of the utility, the appliance can be restored to a proper operating condition. The above does

not imply that the utility need be the exclusive agency for providing appliance adjustment service. Where the utility finds improper installations made by others, it is urged either to correct such installations or to refer the customer to an appropriate agency.

3. In the absence of adequate service by other parties, to offer, at reasonable charges to its customers, parts-replacement service on gas appliances which meet prevailing minimum standards of safety, without distinction as to appliance warranty or point of purchase, provided that the appliance can be restored to proper operating condition. The availability of the necessary parts is the responsibility of the appliance manufacturer or his designated representative.

4. Whenever necessary, to assist appliance manufacturers and their local representatives in the training of appliance installers to conform to local ordinances, building, plumbing and other codes, in order that gas appliances shall be properly installed, initially adjusted, and serviced with replacement parts; and to assist them in making field checks to determine the effectiveness of the training program.

5. To encourage all installers of gas appliances to familiarize themselves with local building codes and ASA Standard 221.30, "American Standard for Installation of Gas Piping and Gas Appliances in Buildings," and also with safe, uniform installation instructions to be furnished by appliance and equipment manufacturers.

AGA Recommendations Sound

As a concrete example of the soundness of these AGA recommendations and to show you why I am so sold on them that my company is endorsing them without reservation, I want to tell you of an experiment we made on our properties. Last year we advertised free appliance service in two of our towns to test the public reaction. We had been doing a lot of service work but had not solicited it. We assumed that our customers knew that we rendered this service and would call if they needed help.

What we found out surprised us because we learned that a great many

DEPEND ON SUNRAY LP GASES When Your Needs are GREATEST...

When the bottom drops out of the thermometer and your customers are crying for more LP Gas, your worries are few if you are a customer of SUNRAY. SUNRAY customers know they can get the LP Gas they need from their usual dependable source. SUNRAY'S plant locations assure you of fast service no matter where you are.

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TULSA 3; OKLAHOMA

Why Dealers Prefer

AMERICAN

Better-Bulk TRUCK TANKS

- **LIGHT WEIGHT**

Highest Quality, High-Tensile Steel

- **HIGH GAS DELIVERY**

Complete Units Feature Exclusive New
"HI-FLOW" Style Piping

- **MAXIMUM SAFETY**

To Meet or Exceed All Requirements

- **PERFECT BALANCE**

Two Cabinets in Rear

- **LOWER COST**

Compare Prices, Quality

COMPLETE U-69 UNIT,
1400-WATER-GALLON
ON 1953 CHEVROLET
2-TON, 2-SPEED

\$3895.00
Excise Tax Paid

COMPLETE U-69 UNIT,
1400-WATER-GALLON
ON 1953 GMC 2-TON,
2-SPEED

\$4070.00
Excise Tax Paid

Budget Financing as Low as \$974 DOWN to Qualifying Dealers

These beautifully designed delivery units are complete, ready for service. Equipment includes motor fuel tank, 50-foot filler hose assembly; power take-off; KK-190 Viking mechanical-seal pump; ICC lights; "HI-FLOW" piping. White enamel finish.

AI Comparable Sav-
ings: "Better-Bulk" Units
Mounted on Your Own
Chassis—Piped Com-
plete, or Set on Your
Truck Ready for Piping.

This Extra Equipment Available at Low Extra Cost:
Carburetion, Vapor Hose Assembly — Neptune
Meter, Tool and Meter Boxes on Side; Directional
Lights.

Complete Prices, Speci-
fications and Budget
Information Gladly
Sent on Request.

Continuing Advancement Through Progressive Engineering

American TANK & MFG. CO.

2136 West Commerce • P. O. Box 5525 • Dallas, Texas • Phone RI-9183

Next Time You're in Dallas Be
Sure to Visit Our Modern New
Plant and Air-Conditioned
Offices on West Commerce.
You're Always Welcome.

people didn't know what good gas service was. The wife of a newspaper editor called to have her range adjusted. She thought gas was supposed to smoke her pots and pans. We found other appliances equipped with artificial orifices and others badly out of adjustment. The surprising thing and the point I am trying to make is that these people didn't know they were receiving poor gas service until we told them in our advertisements to call us, if—

. . . pots and pans were black after cooking;

. . . their heater gave off fumes;
. . . they ran out of hot water.

This program won us many friends. I believe that Joe McDonald, one of the men participating in this experiment, who is attending this school, will bear me out when I say that this program did more to build good public relations than anything we have done in a long time. We received many letters of appreciation from customers complimenting our service men. I can tell you, as president of a company, how much we value letters of that kind because, too often

the only letters we receive from our customers are when they are mad about something.

A program of this nature, done on an industry-wide basis, as recommended by AGA will result in better public relations nation-wide. Needless to say, MidSouth is expanding this policy of advertising its service policy throughout its entire system.

There are 10 other recommendations not directly connected with appliance installation and service which I shall not read. These recommendations may already be a part of the service policy of your particular company or they may be adopted in the near future. In either event, just ask yourselves, on whom does the burden fall of successfully making the program effective. Is there any doubt in any of your minds that the efficiency with which you work, the cheerfulness with which you go about it and the trust which you install in the customer will make or break such a plan? The trite saying, "You, who contact the public—our customers—are the gas company," is old, but I think it is just as true as it was when it was first said—probably by some Chinese supervisor back in the days when they laid bamboo gas mains.

Model	Type	Dimensions	Price
FM-II	Counter Unit	11" Sq. Pot - 15 lbs. Fat 14" Sq. 1-pc. Pot - 32 lbs. Fat 30,000 BTU	\$136.95
FM-III	Cabinet Unit	14" Sq. 1-pc. Pot - 32 lbs. Fat 50,000 BTU	\$157.50
FM-IV	Steel Pot	18" Sq. Pot - 55 lbs. Fat 55,000 BTU	\$216.90

Stainless Steel Pot \$216.90
Leg Stand \$12.00
Maximum delivery charge \$9.00

Fat Mizer

FRYERS

All The Name Implies

LOW FIRST COST

LOW UPKEEP

SIMPLE—SAFE—DURABLE

FAT SAVINGS BEYOND BELIEF!



We have many letters and reports from users proving as much as 10 times longer fat life between changes. Such tremendous saving is exceptional but thousands of installations show you can expect 2 to 4 times longer between changes with our "FAT" MIZER.



Plain good sense shows you will save fat as the sediment is removed from the frying fat and kept cool where it won't burn, recirculate and break down your fat. The "FAT" MIZER chamber is furnished on all models shown.

Easy cleaning too, as the fry pot has no tubes or obstructions and the "FAT" MIZER chamber is instantly removable for simple washing in your sink.

SEND FOR FREE SUPER-CHEF STORY AND CATALOG

Model	Type	Dimensions	Price
II-8	Counter Unit	11" Sq. Pot - 15 lbs. Fat 30,000 BTU	\$175.20
14-SF	Cabinet Unit with Steel Pot	14" Sq. 1-pc. Pot - 32 lbs. Fat 50,000 BTU	\$229.50
18-SF	Cabinet Unit with Steel Pot	18" Sq. Pot - 55 lbs. Fat 55,000 BTU	\$299.80

SUPER-CHEF

The Fryer of Tomorrow—Today

THERE'S NO SUBSTITUTE

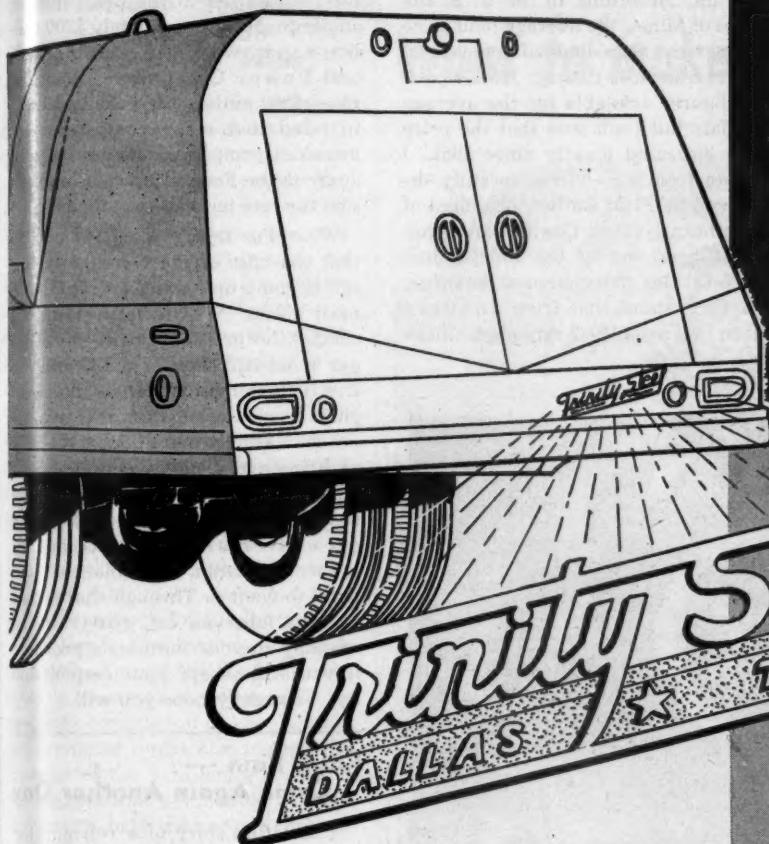
for SUPER-CHEF'S

PATENTED CONSTRUCTION

SUPER-CHEF MANUFACTURING COMPANY

FACTORY—12211 HODGES ST. BL. 3. Box 28

HOUSTON, TEXAS



THIS famous
INSIGNIA ON
A TRUCK TANK

..means so much

It means that it was MADE-READY before delivery to the owner with the greatest of care; not only with all mechanical parts checked, adjusted, inspected . . . but minute details get such thorough attention that a Trinity Steel Truck Tank is easily distinguishable anywhere.

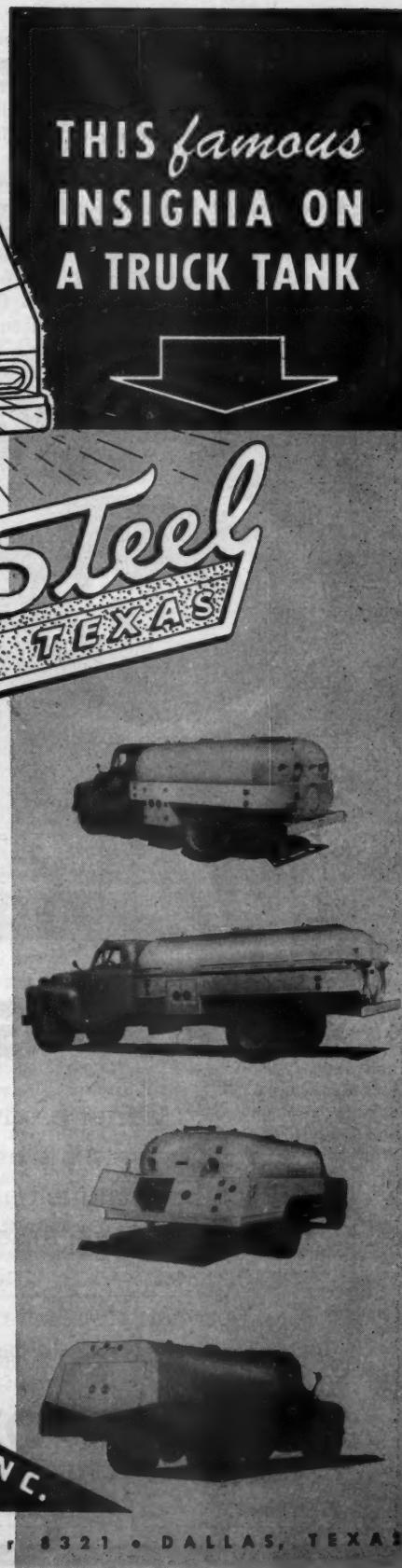
It means that it is backed by the foremost Fabricator anywhere; an organization with just one purpose: to assure Trinity Truck Tank owners complete satisfaction with their units — to the very last day of ownership.

Don't you want to join the hundreds of owners of Trinity Steel Truck Tanks that know how much this insignia means?

Write • Wire • or Phone
for detailed information
and prices.



3301 SOUTH LAMAR STREET • TEL. HUNter 6321 • DALLAS, TEXAS



gas ranges in use in 1940 were replaced by 1950. That is a replacement rate of only once every 20 years. In calling on your customers in their homes you can make them want a new modern gas range. Whether you actually take an order for a range or not, you can be a salesman if you create a want. And the gas industry must have salesmen—"want creators"—if the trend toward electric ranges and refrigerators is to be stopped and its direction reversed.

The price of gas in the field is go-

ing up. According to the U. S. Bureau of Mines, the average field price of gas more than doubled in the seven years from 1945 through 1951. I have no figures available for the average to date but I am sure that the price has increased greatly since 1951. I quote from an address recently delivered by Pratt Rather, president of Southern Natural Gas Co. and presently president of the Independent Natural Gas Association of America: "I understand that from January 1950 to August 1952 rate applications

for increases in the price of gas, amounting to approximately \$200 million a year, were filed with the Federal Power Commission." Imagine that—\$200 million per year and bear in mind that many companies—all intrastate companies—do not have to apply to the Federal Power Commission for rate increases.

What I'm trying to show you is that the cost of the commodity we sell is going up—going up rapidly in most places. We are losing our old competitive price argument—not that gas is not still cheaper than competitive fuels in most cases, but the margin is becoming smaller. It is becoming increasingly more important that each and every one of us understand our responsibility to ourselves, our company and our industry to make our customers want gas and by proper utilization of appliances continue to want it. Through the nature of your jobs you can contribute mightily to your industry's problem if you will accept your responsibility. I sincerely hope you will.

Rain, Rain — Come Again Another Day

This is the story of a refrigerator salesman who believes in doing today what you may put off until tomorrow. Obviously, he never heard of "manana."

It's the story of "Al" Taylor, a salesman of the Haverhill Gas Co. One night recently he was prepared to visit two prospects for a Servel automatic "Ice-Maker." But Al's car wouldn't start.

Undaunted, Al borrowed his daughter's bicycle to make the trip. He began his journey in jaunty spirits with the thought that this, indeed, was the life of a salesman.

Suddenly the skies opened up. In a matter of seconds he was drenched. A man of lesser heart would have turned back, but not Al.

He walked into the home of his first prospect, apologizing for dripping water on the kitchen floor. His apology was accepted, for Al completed the sale of an automatic "Ice-Maker."

It was still raining when Al left the house to go to see his second prospect. By now he was wishing that he had pontoons on the bicycle. Even without pontoons he made it—and sold his second "Ice-Maker."

Al is now convinced there's a silver lining in every cloud.



* LP-Gas

Carter produces high quality Propane and Butane for both industrial and domestic uses. Our service and products are unexcelled. You can depend on Carter.

Wholesale Only

THE CARTER OIL COMPANY
TULSA, OKLAHOMA
P. O. Box 801

Phone 2-6101

**Answers to Problems
on Page 84 of
the September Issue**

Problem 1. (A) If the original heater was not the "quick recovery" type, it is probable that one of these can be substituted, and supply the needed increase in hot water. (B) Water heater diameters are not standardized. You might possibly be able to procure a 40-gallon heater that would fit in the same enclosure, leaving the necessary clearances. (C) If a heater of adequate capacity can not be installed in the present enclosure, ask the customer to construct a cabinet of suitable dimensions in another part of the house or garage, or install the heater without enclosure in the service porch.

(In any of the above cases, be sure to check the ventilating registers of the enclosure, to be sure that they are large enough for the burner.)

Problem 2. The hazards are possible overheating of the adjacent combustible construction, and possible incomplete combustion of gas. The air requirements might also exceed the capacity of the ventilating registers. We suggest that you should ask the customer to have the heater approved by the competent local authority before starting the burner in regular service. The advisability of such changes is questionable, and when the customer realizes the difficulties which might follow he is much more likely to have the job done right.

Problem 3. (A) See that the pilot is the 100% safety shut-off type. (B) Check the burner orifice—if it is adjustable, or the wrong size, put in a fixed orifice of the correct size for LPG. (C) Set the heater up in a position that provides at least 12 inches clearance from the nearest combustible construction. (D) If on a combustible floor, see that same is protected in accordance with the applicable code. (E) Install whatever venting and ventilation is necessary.

Problem 4. The accident was caused by expansion of entrapped water due to the normal heating. Remember that the storage tank was below maximum temperature following the use of water in the showers—it filled completely with cold water, which expanded as it heated, and there was no place for the pressure to escape. The necessary safety equipment consists of a pressure relief valve, which should be installed in

Want to make more deliveries?



**Do it FAST
with RCA 2-Way Radio!**

—says William H. Sullivan,
Pres. and Gen. Mgr.
Shore Gas and Oil Co.

"Fifteen-minute service—when you need it." That's the promise Mr. Sullivan makes to his customers since he equipped his fleet with RCA 2-Way Radio.

Shore trucks, covering a 35-mile radius, can be contacted at any time to handle emergency calls. No need to send out another truck, no need to wait for a truck to come in.

When a call comes in, the dispatcher contacts drivers in the area of the call. Within a few seconds, he assigns a driver to make a direct delivery—without disrupting routings—without expensive back-tracking.

Check the extra service you can give

and the running time you save with RCA 2-Way Radio. Contact the RCA Communications Specialist at your RCA Regional office, or MAIL COUPON.

DO IT BEST with RCA 2-Way Radio

Here's why fleet operators all over the country are specifying RCA 2-Way Radio:

EASY TO USE as your telephone • COMPACT—takes no more space than a spare tire • TOUGH—takes rough use • RELIABLE—engineered by the leaders in electronics • PRACTICAL—easily serviced by the nation-wide RCA Service Company.



RADIO CORPORATION of AMERICA
COMMUNICATIONS EQUIPMENT

CAMDEN, N. J.

RCA Engineering Products, Communications Division, Dept. 204V
Building 15-1, Camden, N. J.

Please send me your new bulletin
"15-minute Service When You Need It."



Name _____ Title _____

Company _____ Address _____

City _____ Zone _____ State _____

Please arrange to have an RCA Communications Specialist call on me.

the hot water outlet line and vented to the outside of the building in such a way that neither escaping hot water or steam could cause personal injuries to any bystanders. Some authorities require pressure valves interconnected to the gas burner to close off the gas supply in case excessive pressure develops.

Problem 5. The laboratory tests on which incinerator clearance regulations are based can measure only the heat input from the gas burner. The heat that will develop from the "load" is unknown, so it is necessary to make allowances for the most severe condition that may be encountered.

Problem 6. The obvious reason for the regulation prohibiting the use of draft hoods on incinerators is to prevent the discharge of objectionable odors of burning rubbish into the house as the result of backdrafts. There is in addition the possibility that the fumes may be poisonous. The draft hood is designed to prevent blowing out of the burner or pilot by back-drafts. A suitable internal substitute is included in the design of the approved incinerator, making the external draft hood unnecessary.

Questions for Review

Problem 1. Each ingredient used in L. P. gas (butane, propane, etc.) has its own boiling point, and its own range of pressures in relation to temperature. Mixtures have pressure characteristics in proportion to the percentages of the ingredients in the mixture, as shown in the accompanying diagram. Commercial propane reaches the "pop-off" pressure of the 125 psi relief valve in the butane tank at about 80 deg. F., so a little sunshine on the tank is all that is necessary to raise the pressure high enough to cause the valve to open. Propane should never be stored in a butane tank. Some operators remind their delivery men of this precaution by attaching a permanent tag, "Put nothing but butane in this tank." Others paint a red "B" adjacent to the filler fitting on the tank.

Problem 2. The man had forgotten to turn off the appliance cock after the fire went out, and before he reconnected the filled cylinder. This is the cause of a high percentage of the trailer explosions. A dual cylinder system with either a manual or an

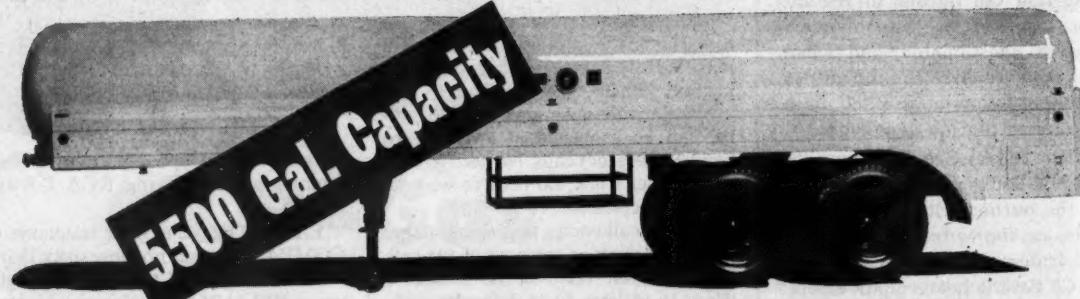
automatic changeover would have provided partial safety. With either changeover control, the same thing might occur if he allowed the second cylinder to become empty. Complete protection could have been provided by installing a Rego three-way cut-off valve (which closes with a drop in pressure, and can only be reopened manually) next to the stove.

Harper Wyman Establishes All-Time Safety Record

A record of 5,349,270 consecutive man hours without a disabling injury is the achievement of the Harper Wyman Co. of Chicago which was recently cited by the National Safety Council. In commanding the Harper Wyman organization, manufacturers of valves for the gas industry, the National Safety Council stated "to our knowledge, this is the longest injury-free period achieved by any manufacturer in the heating equipment industry."

The period covered by the award extends from Jan. 14 of 1944 through Dec. 31 of 1952. Actually a new mark is still being set as Harper Wyman's record remains unblemished.

EVERYTHING FOR LP GAS STORAGE & TRANSPORTATION



Brute Strength + Big Capacity = LASTING USEFULNESS

Compare your requirements for LPG transportation with the features of our new 5500 gallon trailer. You'll discover that it measures up to all your expectations for strength, for long life, for real utility. Here is an unparalleled example of the craftsmanship and know-how which make Superior-made products foremost in the LPG industry. Whatever you need for transport or storage, large or small, Superior makes it—and makes it better!

Superior

MFG. COMPANY

4110 N. E. EIGHTH

AMARILLO, TEXAS

ALL INQUIRIES ANSWERED PROMPTLY

PIONEERS IN HIGH PRESSURE LPG TRANSPORTATION EQUIPMENT

Caloric Adds Service In Southeastern States



Jane Dowdy

Miss Jane Dowdy, home economist, has been added to Caloric Stove's Southeastern district staff to assist L. P. gas dealers in promotion of appliances.

Miss Dowdy, a graduate of Auburn, will aid in the development of a school program for Caloric, as well as cooking demonstrations in cooperation with dealers and the Caloric dryer promotion.

Formerly with Alabama Gas Corp., Birmingham, Miss. Dowdy participated in their weekly TV show over WAFM-TV.

Suburban Gas Expands Service

Acquisition of the Butane Distributor firm of Yuma, Ariz., by Suburban Gas Service was announced by Suburban president W. R. Sidenfaden recently. The purchase marks the expanding service of Suburban into rural Arizona.

With plants in Perris and Hemet, Calif., Suburban serves rural residences through 20 operating subsidiaries. The firm's entrance into the Arizona area will be accompanied by its successful Metergas system employed in the California territory.

General Gas Opens Store in Mississippi

Formal opening of the General Gas Corp. store at Laurel, Miss., was held recently, marking the 37th retail outlet for the Baton Rouge firm.

Announcement of Howard Cole of Laurel as the district resident manager for the new store was made by L. W. Patterson, vice president and sales manager of the parent firm. Assigned as office manager was Frank Barrett, long associated with the state motor vehicle office.

Visitors at the opening of the new butane and appliance business received numerous prizes, among them 800 gals. of butane and a General "Economatic" range.

APPROVED

Okadée

"PERFECT SEAL"

VALUES

for
Bubble-tight
Primary
Shut-off in
L P G A S L I N E S

Underwriters' Laboratories, major LP gas producers*, and Liquified Petroleum Gas Commissions of several States* approve Okadée Valves for primary shut-off in LP gas lines. In addition, Okadée Valves are used in virtually all types of gas and liquid lines at pressures to 600 p.s.i. and temperatures to 800°F.—wherever a perfect seal, low maintenance and long life are necessary.

Get complete data, including material specifications, on Okadée Valves — and newest Underwriters' Laboratories test report—without obligation, today.

*Names on request.

- A. S. A. Standard dimensions
- Sizes from $\frac{1}{2}$ " to 6"
- Single- and double-seated disc valves
- Hard-faced valves and seats . . . perfect metal-to-metal seal
- Self-cleaning, self-compensating valve discs
- Lever, rack-and-lever, or worm-gear operation
- Non-lubricated
- No wedge action
- Valves and seats wear in instead of "wearing out"
- All parts quickly replaceable in the field
- Inside and outside stem packing . . . double assurance against stem leaks

Underwriters' Laboratories Reexamination Service Guide, No. 141 A3.1.22, File MH5163. SL Screwed Type Series and Series 15 and 30 Flanged Type Okadée Valves are suitable as a positive shut-off in LP gas pipelines and other LP gas applications for a working pressure of 250 p.s.i.

Write for Bulletin No. 51FL



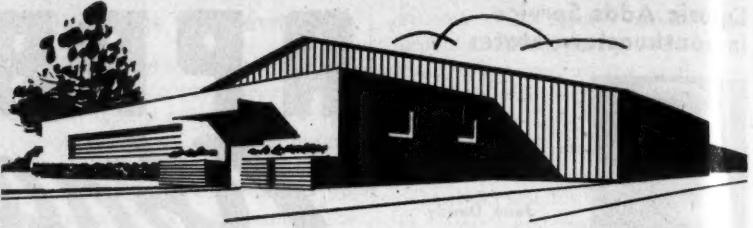
Okadée COMPANY

332 South Michigan Avenue

Chicago 4, Illinois

American Tank & Mfg. In New Dallas Plant

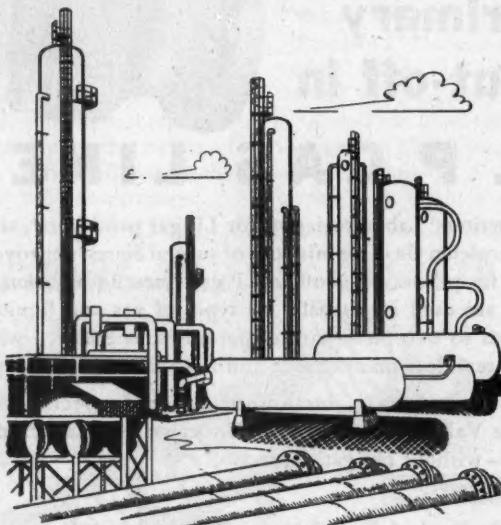
A new plant and office located on a 10½-acre tract at 2136 W. Commerce St. in Dallas now accommodates American Tank & Manufacturing Co. The new headquarters, which features paneled executive office with television and fireplace and a deluxe customers' lounge, includes parking facilities and plans for a bricked-in patio for entertainment of customers and guests.



Over-all dimensions of the new office are 40 ft. by 40 ft. and of the plant 60 ft. by 165 ft. Three assembly

lines, beginning at the back of the plant, produce all sizes of systems, transport tanks, motor fuel and tractor tanks. Seven bays for mounting trucks and other special assembly work are connected to the main plant, and storage and equipment supply rooms are located off the main plant.

CITIES SERVICE LIQUEFIED PETROLEUM GAS



... in L. P. gas also Cities Service means Good Service

- A DEPENDABLE SOURCE
- UNIFORM PRODUCTS
- A CAPABLE SUPPLIER
- TWENTY-FIVE YEARS EXPERIENCE

CITIES SERVICE OIL CO.

DELAWARE

Bartlesville, Okla.

Chicago, Illinois

OTHER SALES OFFICES

Cleveland • St. Paul • Kansas City • Toronto



Virginia LPG Firm Plans New Quarters

A new \$94,000 service building will be built by Virginia Gas Distribution Corp. of Staunton, Va., Manager M. O. Wiggins has announced.

The two-story masonry structure will contain an auditorium and demonstration kitchen, a meter shop, and storage for materials, automotive equipment and tools.

Virginia Gas Distribution serves customers in northern Virginia and the Shenandoah Valley.

New LPG Firm Formed In Tulsa

P. C. Walter, Tulsa, recently formed a new company, known as Mallard Petroleum Co., to engage in the wholesale marketing of L. P. gases and natural gasoline. Offices of the company have been established in the Drew Building in Tulsa, Okla.

Prior to the formation of the company, P. C. Walter had been assistant sales manager of the L. P. gas department of Sunray Oil Corp. He was also associated with the L. P. gas division in Wisconsin of Warren Petroleum Co.

Florida Dealer Holds "Open House"

A new modern building was the occasion for the recent "open house" held by Coastal, Inc., Panama City, Fla., LPG firm.

Coastal, Inc., in addition to selling bottled gas, handles a line of gas and electric appliances. The company maintains 20 employees, of which J. D. Holmes is president and J. A. Holmes, manager and secretary-treasurer.

New York Firm Expands Service

Household Service, Inc., Lowville, N. Y., firm distributing metered gas service, is now supplying gas to customers of the Lowville Gas Corp., which has gone out of business, John Ganey, manager of the former company, announced.

The changeover was completed with the removal of two large gas tanks of the Lowville Gas Corp., which operated on a butane-air system, distributing gas service to homes through a network of underground mains.

Far West Gas To Open Washington Branch

Far West Gas & Appliance Co., established on the Olympic Peninsula since 1948, announced it will open a branch in Port Townsend, Wash., and that Riley North, formerly manager of the Olympic Gas & Appliance Co. of Townsend, will be the branch manager of sales and service.

Far West Gas & Appliance established its propane gas storage plant in Sequim in April, 1948, and since then has opened branches in Forks and Port Angeles.

A grand opening will be held, with gifts for the public. Opening specials will be offered by the firm, which will carry a full line of nationally known appliances and full equipment for sales, service and installation in the area.

Picnics Can Be Profitable As LPG Goes to Barbecue

In Redwood City, Calif., lives a businessman named H. E. (Rowdy) Holmquist whose hobby is outdoor barbecuing—for about 1500 persons. Holmquist is owner of the Redwood City Hardware Store, but he finds time to take his services and equipment to most outings.

Holmquist's hobby was only that at first—a hobby—but demand for his services became so extensive as to necessitate charging a fee; it's still a picnic for the owner of the mobile barbecue unit, but it's business, too.

Holmquist's equipment represents quite an investment: two trailers to haul an 8-ft. long barbecue pit, a butane-powered range with a cast iron top and warming ovens, two stainless steel army kitchens, a steam table, 17 Navy surplus dining tables, 1300 stainless steel food trays and silver for 350 persons. Holmquist not only hauls all the equipment to the picnic site, but sets it up and personally barbecues.

It's easy to install
central heating



Janitrol
FHS
CONDITIONER
PLUS
"Save-Way"
AIR SYSTEM

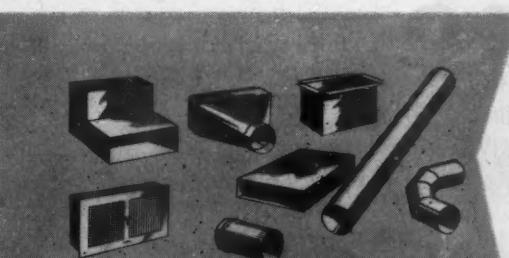
The Save-Way Air System, using 4" ducts, simplifies your installation work, reduces labor and material costs, provides the best there is in "every-room" comfort . . . at a price that is surprisingly low for this "ultimate" in heating.

As pictured above, Janitrol FHS Units can be installed where most convenient . . . requiring no floor

space, yet offering easy access to all controls and connections. Together —FHS and SAVE-WAY—offer the greatest possible flexibility . . . latest heating principles . . . simplified installations . . . and real opportunity for you.

For complete information write for Bulletin JS-185.

SURFACE COMBUSTION CORPORATION • TOLEDO 1, OHIO

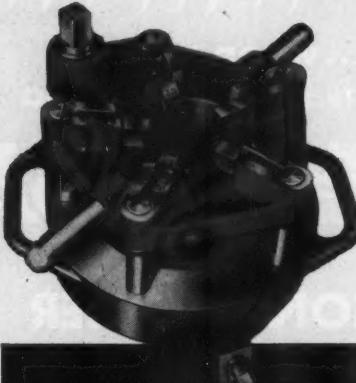


USE PREFABRICATED
SHEET METAL ITEMS
IF YOU WISH

Everything needed to complete a Save-Way Air System, including 4" duct, fittings, register boxes and diffuser type registers are available as standard items from your regular suppliers.

**preferred everywhere for
ease and
speed**

in 2 1/2" to 4" pipe work



TOLEDO
NO. 2BR GEARED
THREADER

Put this popular Toledo on your 2 1/2" to 4" pipe. Watch it produce perfect tapered threads with top-speed . . . and a minimum of effort.

EFFICIENT HAND OPERATION . . .
Light weight . . . easy handling. Convenient carrying handles. Employs Toledo receding die principle . . . 5 die segments . . . highest quality tool steel . . . three broad faced chuck jaws for easy centering.

HIGH SPEED . . . Operated with a Toledo Power Drive, the 2BR will thread 4" pipe in less than 2 minutes!

ORDER THROUGH YOUR SUPPLY HOUSE . . . Write for catalog 11A-52. The Toledo Pipe Threading Machine Co., Toledo, Ohio. New York Office: 165 Broadway, Room 1310.

Rely on the Leader

TOLEDO
PIPE TOOLS . . .
POWER PIPE MACHINES . . .
POWER DRIVES

Measuring Errors In Dispensing LPG

By Dan Perkins
California Department
of Weights and Measures

In the following paper, I will attempt to point out some of the errors encountered in the measurement of LPG during my experience as an engineer in this field.

The bulk of the LPG sold within the State of California is measured in the liquid state in U. S. gallons of 231 cubic inches. At the present time no correction is allowed to the dealer and sub-dealer for expansion and contraction due to temperature differences. The only temperature correction now being made is by the producer at the source of supply. It is hoped that the meter manufacturing industry will develop an inexpensive automatic temperature correcting meter, which will enable the LPG dealers to reconcile their sales with their purchases. At the present time, the only corrective method permitted in California is to allow the dealer to increase the price sufficiently to compensate for temperature variations.

From a sales method standpoint, I am dividing the possible errors into several categories. First, Dealer and Sub-Dealer Sales in Gallons: The main cause of these errors is inadequate or no inspection by Weights and Measure Officials. LPG meters should be routine checked at least once a year and preferably semi-annually. They should be checked immediately on request.

Undoubtedly the greatest single cause of meter error in the past has been due to faulty installation. Such things as no strainer or too large a mesh strainer causing excessive wear on the meter, poor pumps, no automatic by-pass, no method of vapor elimination—have all had their part in contributing to metering errors.

It is a peculiar thing, but many dealers that are very careful with their bookkeeping and cash have made the statement "That's a fine old meter, hasn't had a thing done to it for fourteen years."

The majority of meters have a definite rate of slip; in other words, a given amount of LPG will flow through the meter without turning it, and as the meter wears this amount increases and may vary from a tenth of a gallon or so per minute to four or five gallons per minute. Naturally, the longer it takes to fill a given size container, the more gallons are given away. A slowdown of the metering rate may be the result of worn pumping equipment, gummed up meters, clogged screens, undersized pipe line, long small hoses, filling through POL valves, not using a vapor return hose, poor back pressure valves and leaky vapor eliminator valves. The use of an oversized meter is also a cause for considerable loss. The larger meters rated at forty to fifty gallons per minute will not accurately meter at seven or eight gallons per minute. It will deliver a "long" gallon.

A surprising number of broken parts have been discovered in metering equipment during routine checks, thus contributing to another direct cause of error—ignorance of proper repair methods. I have found gears reversed, the wrong gears, worn out measuring chambers merely cleaned and reinstalled, worn out piston leathers and worn cylinders. All the meter manufacturers have booklets available on the repair of their meters. It would appear to me that with an instrument that is just as important as the cash register a dealer should take the time to secure these instructions and read them and understand them. It is surprising the number of dealers who allow small leaks to exist—besides being a fire hazard, they work against him 24 hours per day.

The next category is complaints by the purchaser. Again the main rem-

*Presented at the recent annual meeting of the Utah Liquefied Petroleum Association, Salt Lake City.

AGA Approved
from floor
to ceiling

Extra Warmth
from exclusive
Holly S-H-E*

Across the nation, **HOLLY** serves the L. P. G. industry

Mfrs. of Famous Stubby Floor Furnaces

Factory Tested
for trouble-free use
with L. P. gases

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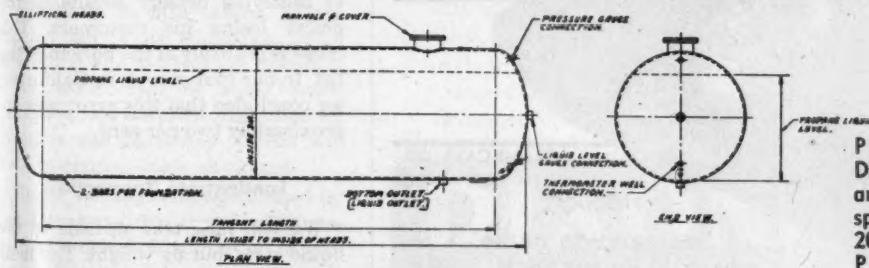
From Miami to Vermont . . . and Alaska to Tijuana . . . the L. P. G. Industry is relying on Holly NarrowWall recessed heaters for more warm air circulation and better heat distribution. The *Secondary Heat Exchanger (Pat. 2602441) adds to comfort by heating and discharging air drawn from floor level. No hot walls or foggy windows. Easily installed!

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PROPANE STORAGE TANKS by DOWNTOWN



TANK DIMENSIONS

18000 GAL TANK.		GROSS CAPACITY U. S. GALLONS	30000 GAL. TANK	
15480		APPROX. PROPANE CAPACITY GAL. (86% OF GROSS)	25800	
200		WORKING PRESSURE A.S.M.E. PAR. U-69 CODE	200	
94"		INSIDE DIAMETER, INCHES	106"	
47'-4"		TANGENT LENGTH	62'-6"	
51'-3"		LENGTH INSIDE TO INSIDE OF HEADS	66'-11"	
25.4		WEIGHT TONS (APPROX.)	41.3	

Propane Storage Tanks at DOWNTOWN are electric arc welded construction; welds spot checked with x-ray for 200# W.P., in accordance with Paragraph U-69 of A.S.M.E. Code for Unfired Pressure Vessels — Hydrostatic tested at 400# W.P. or 250# W.P. according to Paragraph U-201 of A.S.M.E. Code and the A.P.I. — A.S.M.E. Code. Construction meets Codes as specified above, National Board of Fire Underwriters and other approval agencies' requirements. We'll be glad to comply with your request for further details.



DOWNTOWN IRON WORKS, INC.

DOWNTOWN - PENNA.

STEEL AND ALLOY PLATE FABRICATION AND HEAT EXCHANGERS

DIVISION OF
PRESSED STEEL
TANK COMPANY



edy for this is adequate and frequent inspection by Weights and Measures Officials. Broken diaphragms in back pressure check valves are probably the greatest cause of the honest dealer, unintentionally, shorting the buyer. When these diaphragms break, if they are properly installed, it allows liquid which has been metered to return to the truck or storage tank instead of being delivered to the purchaser. Ignorance of proper repair methods is again an unintentional cause of shorting the buyer.

A good illustration of this is the installation of a new measuring chamber in an old meter. The old meter has had the gears in the counterhead changed to compensate for slippage and many mechanics do not know that these must be changed back to the same ratio as used on a new meter when a new measuring unit is installed. In other words, always remember that any counter regulation or adjustment is made for a particular measuring element and when that measuring element is

changed, the counter adjustment must be changed. This can also work in reverse where a new counter with a new meter gear setting is installed on to an old measuring element.

A very frequent cause of shorting the buyer is not priming the filler hose. Many delivery trucks have more than 100 feet of hose draped around them and exposed to the sun. In the runs between deliveries, this hose absorbed heat and vaporized the LPG. The customer gets the vapor measured as liquid. This can be corrected to some extent by using protected hose reels. Another cause which is fast being remedied is spinning the meter. This can be eliminated entirely by the use of a good differential back-pressure check valve properly installed. On meters which do not have this type of valve it can be eliminated by slowly opening the filler valve, particularly when filling an empty tank.

Expansion due to high temperature is still another way of shorting the buyer by giving him a diluted gallon in hot weather. Excessive blowing of vapors to atmosphere in order to fill a tank with a poor or worn out pump also shorts the buyer. Inasmuch as the LPG business is a repeat business, deliberate cheating or falsifying usually results in the dealer losing his customers. This cause is probably at the bottom of the list. In our first survey in California, we concluded that this error was approximately two per cent.

Inadequate Inspection

We will now take up sale in the liquid state, but by weight. The most common cause of errors in this method is again inadequate inspection by Weights and Measures officials. Scales may be rusted up, out of order or broken. The use of non-code cylinders without tare weights also aid in error. Carelessness in filling and excessive bleeding of vapor to atmosphere also help contribute. It is a common practice to sell LPG in small cylinders using the ten percent valve to determine the amount delivered, charging a minimum price regardless of the amount of fuel actually delivered. Many of the trailerites have discovered that they can get about a half gallon more in a five-gallon cylinder by removing the ten percent valve and breaking off the extension tube. This creates an

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industry**



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PROPORTIONED OILING. A few drops of oil per tank car of product...
Oil never under pressure.

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PRACTICALLY MISTAKE PROOF. Least skill required for operation.

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DRY.

LOWEST INITIAL COST.

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AUTHENTIC INSTALLATION SPECIFICATIONS.

LOWEST OPERATING COST.

TIMKEN BEARINGS.

CORKEN'S inc.

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extremely dangerous condition besides cheating the dealer of a half a gallon. If the employe who fills the bottle is not very careful this condition will not be discovered.

There has been a considerable influx of non-code tanks in the western states during the past years. Many of these tanks are actually larger than represented. Six and even seven-gallon cylinders have been represented as fives. The obvious remedy for this is to weigh all fuel sold, whether a minimum is used or not. We are asking our dealers in California to establish a price per pound, and to show the pounds actually delivered and the cost thereof, and if there is a difference between this amount and the minimum to show it as a service charge.

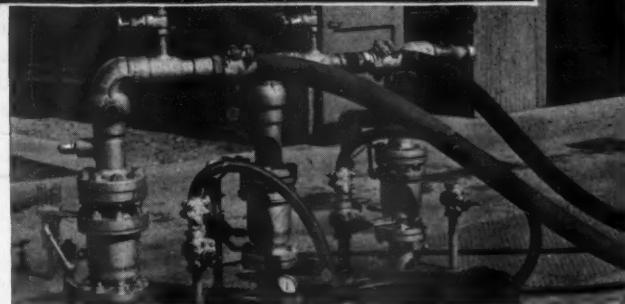
Certified Calibration

The next category will be the Sale of LPG by Calibrated Measure. This method mainly concerns the sale or purchase of gas in large quantities, such as a tank car or transport truck or trailer. Shortages may be caused by not requiring certified calibration of the container. They may be also caused by overfilling, or by not using the correct specific gravity in calculating the net gallons at 60 degrees. Errors may be also caused by too much vapor return allowance. Or by overfilling due to breakage of outage valve extensions. In other words adequate and frequent inspection by Weights and Measures officials will help to control these shortages.

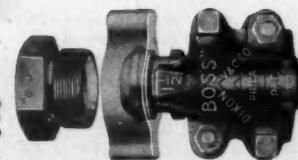
Buyer shortages may be caused by not seeing that the transporting vessel has a certified calibration of contents. Probably the greatest single cause of buyer shortage is underfilling. Much of this is not deliberate, but is caused by rapid filling with warm fuel and not allowing sufficient time for vapor bubbles to condense. This can be corrected by a slight increase in pressure in the tank being filled towards the end of the filling run and allowing time to settle before topping off again. Incorrect specific gravity in calculating the corrected volume of 60 degrees may also cause shortage. Not emptying the transporting container or being unable to empty this container is another common cause of error.

We are attempting to get the transporters to correct this condition in their equipment by not giving them

For Maximum SAFETY
in L-P Hose Connections!



"G J-BOSS" GROUND JOINT FEMALE COUPLINGS—STYLE X-34



Without equal in efficiency, durability and safety for all L-P Gas hose connections. Ground joint union between stem and spud assures leakproof, trouble-free seal. Furnished with super-strong "Boss" Offset and Interlocking Clamps. All parts steel or malleable iron, thoroughly rustproofed. Sizes $\frac{1}{4}$ " to 6", inclusive. Also available in washer type, and with companion "Boss" Male Couplings. Stocked by Manufacturers and Distributors of Industrial Rubber Products.

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ASSOCIATE COMPANIES—BUCK IRON COMPANY, INC., QUARRYVILLE, PA. • PRECISION DRAWN STEEL COMPANY, CAMDEN, N.J.

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INCINOR IS APPROVED BY A.G.A. LABORATORIES

ACT NOW FOR COMPLETE DETAILS

INCINERATION DIVISION, BOWSER, INC., CAIRO, ILL.

credit for any retention in a container when calibrating it and certifying its capacity. In the past, certain unscrupulous transporters have used both liquid fuel and vapor from the main tank to operate their equipment. Others have made split deliveries using their rotary gauge to determine the quantities delivered, which has resulted in many unfair and inaccurate billings. Leaks in pump and valve packings and in hoses, fittings and pop valves are also a cause of

loss. In California we believe that LPG transporting equipment should be re-calibrated every fifth year to insure that outage valve extensions have not been broken and that the equipment is in good shape and free from dents and leaks.

The next category is Selling by Vapor Volume. This method is rapidly becoming popular in the West. It has many advantages from a routing and storage standpoint for the dealer. Again let me stress that the

main remedy for any errors occurring when this method is used is adequate and frequent inspection by Weights and Measuring officials. Probably the most common cause of errors when using this method of dispensing is due to improper installations. These may be caused from inadequately sized pipe line, too small meters, too small or inaccurate pressure reducing valves, excessive temperature variations, constant changes in pressures while being metered, no correction factor being used with high pressures, no correction for altitude, changes in fuel consistency, errors in reading meters and errors in setting up selling price structure.

Vapor meters should be kept up in good condition and not allowed to wear out on the job. In California we have tentatively decided to attempt to inspect all vapor meters dispensing LPG and not coming under the Utility Commission, at least every five years. We will ask the dealers to carry ten percent more meters than they actually have in service and to have semi-annually installed this ten percent, removing the oldest meters first and assembling them in a central place where they may be tested by Weights and Measuring officials. We hope that at the end of five years we will be able to have every meter in service sealed by the Bureau of Weights and Measures. This program will take considerable education on both the part of the Weights and Measures officials and the dealers.

Uniform Measuring Unit

We have insisted that a uniform measuring unit be used in California, namely, the cubic foot. I recently discovered a set-up where a one-thousand-gallon tank was supplying sixteen services, using six different methods of servicing and three different delivery pressures. This tank was originally connected to six services but as time went on more and more were added, including considerable heating load and a dry cleaner's steam boiler. When this tank was checked the outside temperature was about sixty degrees; however, due to the very rapid withdrawal of gas, the temperature of the vapor being metered was less than twenty degrees. This caused a considerable loss to the dealer. This dealer did not realize

Sell Ransome LP-Gas Torches and Furnaces FOR WINTER WORK

Here's real cold weather seller—several dealers have sold 100 to 200 in single season. Large, intense flame holds steady in icy winds and drafts, makes this RANSOME RHT torch ideal for thawing pipes, pumps and equipment. Trigger valve available for intermittent work. Burns 1 gal. LP-Gas in 90 mins. at 10 lbs. Lights instantly even at 30° below.

BUILDS SUMMER FUEL LOAD, TOO

RANSOME RHT torch has plenty of summer uses—melting lead, babbitt and white metal; pipe bending, preheating, fender repairs, singeing, weed-burning, flame cultivating, disinfecting, paint burning, etc. Sells to oil fields, farmers, garages, machine shops, factories, sheet metal shops, contractors, public utilities, etc.

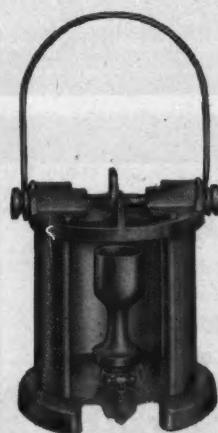
Stock NOW. Write TODAY for price list, discounts and catalog.

P-25 Furnace makes good space heater (removable hood available). No fumes, smoke or soot. Designed for melting lead, glue, paraffine, asphalt, etc.

RANSOME COMPANY

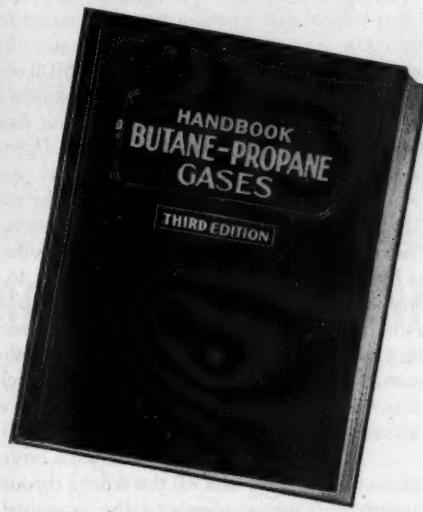
Liquified Petroleum Gas Division

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Ransome

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on Liquefied Gas Engineering,
Installation and Operation



352 PAGES of Technical Facts, Charts,
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| <input type="checkbox"/> 1/2 TON | <input type="checkbox"/> 3/4 TON |
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I am interested in Side Boxes to con-
vert my "Pick Up" to a Service Body.

Stahl METAL PRODUCTS Inc.
3490 W. 140 St., Cleveland 11, Ohio

that there was such a thing as a pressure correction. Some of his sixteen customers were getting a very generous supply of fuel at a low price while others were really paying through the nose. We realize that we still have many meters registering in pounds, butane units, therm, and many other so called units of measurement, but with the addition of more help we hope to eliminate everything except those registering in cubic feet.

The next category will be Sale to Automotive Equipment at Service Stations. Besides the problems I have already outlined service stations have certain problems of their own. Inasmuch as it is general practice not to use the vapor return, it is essential to have a good pump and a meter that will measure accurately at varying filling rates.

Meters used on service stations should be kept in excellent condition and frequently checked as this type of installation subjects the measurement equipment to about the hardest use in the LPG industry. Many of the filling islands are several hundred feet or more from the supply tank and with the growing substitution of propane for butane it is essential that the supply lines are adequately sized for the job. We have found it a good practice to install a supplemental pump by-pass valve at the meter. This valve could be checked at a slightly lower pressure than the by-pass valve at the pump, causing the feeder line to circulate by returning excess liquid through the vapor return line. When this type of installation is used, the pump should be turned on first before connecting the filler hose, allowing the line to circulate and eliminate vapor bubbles.

Most truckers are in a hurry and want a filling rate of 30 gallons per minute or more, if possible; hence it is customary to use a one-and-a-quarter or one-and-a-half inch meter with about a two-inch pump for this type of service. We do not advocate using such a set-up to fill five-gallon bottles. The restriction caused by the POL valve slows the meter down too much, with resulting slippage. It would be much better to install a bottle fill meter of a smaller size or a scale at a convenient location.

I trust that in the future the average dealer will at least try to check up on the accuracy of his dispensing equipment occasionally. There are several relatively simple methods of doing this. The delivery truck may be calibrated and complete dumps checked against the meter. Another good method is to install a large plant meter and fill the trucks through this meter, checking the amounts delivered to the trucks against their sales. A bottle of known capacity may be set aside and occasionally filled.

In other words, check your measuring equipment as you would check your cash, and you will greatly reduce your errors. I realize that this discussion is far from complete and there are probably several hundred more causes of error which have not been taken up. We will attempt to answer specific inquiries direct by mail as time permits. You may contact me through the Bureau of Weights and Measures, Mull Building, Sacramento, California. I trust that this paper will cause the buyers and sellers of LPG to give some thought to the metering equipment in use and to secure help in checking these dispensing devices from the Weights and Measures officials in their locality.



Latest addition to the Ripley Gas Service Co. of Ripley, Ohio, is the new Model 1600 L. P. gas truck tank built by Butler Manufacturing Co. of Kansas City. Mounted on a Dodge truck, the new unit is equipped with Corken Model 50 pump, Neptune meter with Print-O-Meter register and Ensign carburetion.



PROPANE TRUCK TANKS FOR ALL DELIVERY NEEDS

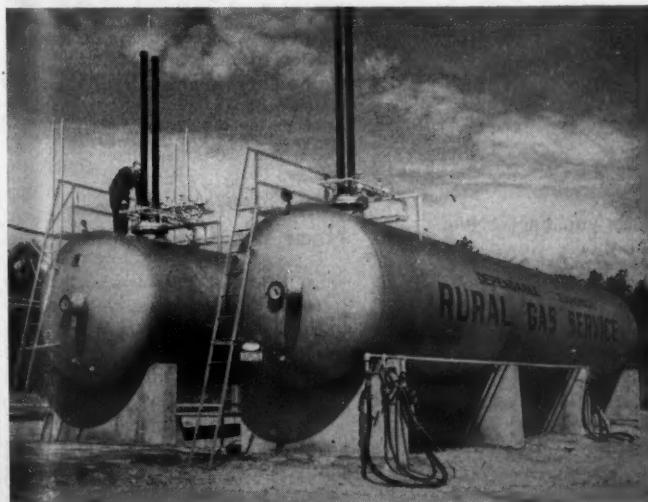
In streamline (illustrated) and walkway types, 1,181 gal. to 1,700 gal. water capacities. Constructed in accordance with A.S.M.E. Code, par. U-69, 200# w.p., or A.S.M.E. Code, 1950 edition, 250# w.p. Mounted on your chassis complete with valves, fittings, pump, hoses. Unit ready for immediate use when picked up. Write for details.

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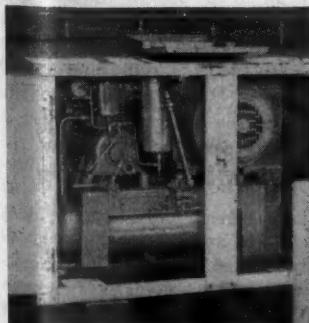
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**Large New England gas company installs
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The Rural Gas Service in Westfield, Massachusetts, supplies LP gas to some 40,000 customers throughout New England. Because theirs is a volume business, Rural has to squeeze every drop out of the tank cars which deliver the gas to them.

That's why they installed the new, compact Worthington LPG Transfer Unit to move the LP gas from the tank cars to their storage tanks. The Worthington unit gets all the gas, including the residual vapor.

Take a lesson from Rural and don't leave *your* profits in the tank car. Learn how quickly a Worthington LPG transfer unit will pay for itself in gas saved. Write for Bulletin H-609-B1A to Worthington Corporation, Harrison, New Jersey.

N.3.4

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it says LOOK OUT

- The accepted standard odorant for natural or liquefied petroleum gas — gives sure but harmless warning.
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Seal-Coated Sandstone Provides Key To Successful Cavern Storage of LPG

By the development of a chemical sandstone sealer that renders the Mississippi river bluffs impervious to petroleum gases, United Petroleum Co. will be able to store some 2,500,000 million gals. of LPG in the sand mines near Maiden Rock, Wis.

Success came after 21 months of experimentation in the sand mines by United Petroleum, with Harold Geisse, company geologist, spearheading the development of a sealer that had to be non-inflammable, non-poisonous, resistant to the near 100% humidity of the caves, and would completely seal a volatile gas. With the assistance of the West Chester Chemical Co., West Chester, Pa., a basic sealer was perfected into the highly elastic, impervious coating which provides the answer to one of the industry's crying needs—satisfactory, low-cost storage.

Plans for the construction of the underground storage are under way by United Petroleum. LPG will be shipped to Maiden Rock by rail and river barge, officials indicate. Tank trucks will deliver the gas from the

storage depot to points throughout the Midwest.

A major development in the industry, the underground storage venture has been closely followed by oil men throughout the nation, and the success of the project may inspire other oil companies to follow suit.

Trageser Expands LPG Tank Line

Keeping pace with swiftly-rising farm, suburban, industrial and commercial uses of liquefied petroleum gas, the Trageser Copper Works, Inc., Maspeth, N. Y., has announced expansion of its line of L. P. gas cylinders to include three large-size storage tanks, designed for economy of servicing and with capacity for all household, farm and factory needs.

The new sturdy, yet light tanks, now in full production, come in 250, 387 and 500 gallon sizes. Other "Trageser" cylinders are available in eight sizes, ranging from 20 to 420 pounds.

The new large-size "Trageser" L. P. gas systems, designed for above-ground storage, will save suppliers the time and expense involved in constant shuffling of the smaller refill bottles to customers, Mr. Trageser stated. For example, the new 500-gallon tank has five times the capacity of the largest previous Trageser cylinder, the 420-pound size.

Conoco Plans Storage Near Big Lake Field

Continental Oil Co. has asked permission of the Texas railroad commission to construct a 2,000,000-gal. capacity underground storage cavity one mile west of the Big Lake field of Reagan county, west Texas.

It would store liquefied petroleum gases from the Todd Ranch gasoline plant some 27 miles south of Big Lake. The cavity would be in a salt, believed to be 350 ft. thick, and in the Yates sandstone. The Todd Ranch plant now turns out 50,000 gals. a day of propane, butane and natural gasolines.

"Operation Blue Flame" TV Vehicle For Industry

Dione Lucas, versatile television cook who demonstrates to housewives from coast to coast that cooking can be an art, gives every appearance of becoming the gas industry's

BUTANE-PROPANE News

PG
out
luse
ure
men
suc-
her

first nationwide TV star.

A major feature of Caloric Stove Corp.'s "Operation Blue Flame," Mrs. Lucas' performances are on film, telecast over local stations, for the largest number of sponsors of any TV cooking show. Sponsors number both utilities and gas appliance dealers.

The reason for the show's phenomenal growth is that it provides low-cost TV merchandising for utilities and dealers whose advertising budgets normally would not permit this high-cost medium. Caloric offers the films free, practically eliminating all production costs. Each sponsor writes his own commercials, and plugs his own sales promotion.

Julius Klein, Caloric president, sees the end result of "Operation Blue Flame" as an industry-wide program that can be nationally promoted while still retaining the distinctive advantage of pointing all commercial time to the specific sales objectives of each sponsor.

Coleman Fall Campaign Uses Top Radio Shows

Hitting at the peak of the heating-buying season, the Coleman Co. of Wichita, Kans., manufacturer of home heating and air conditioning appliances, will use three top radio shows over the full NBC network for a special fall selling campaign beginning September 15 and concentrated in four weeks.

Gas and oil space heaters will be featured over all of the network of 216 stations except in about 40 cities in the south and southwest where, because of market conditions, wall heaters and floor furnaces will be promoted.

Dealers throughout the country will be able to tie in with the network shows through local spots, in addition to which the fall heater program also is being carried out through backbone newspaper advertising and a bonus campaign.

Similarity of Names Creates Confusion

Confusion of corporate identities was cited recently by Bernard J. Hank, president of the Conlon-Moore Corp., Chicago, manufacturer of home laundering appliances and ranges, in connection with a voluntary petition filed in the U. S. District Court by Conlon Bros. Manufacturing Co., Inc., also of Chicago, in proceedings for an arrangement under the National Bankruptcy Act.

"Conlon-Moore has no connection of any kind with the similarly named concern," Mr. Hank asserted.

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15,000 BTU to 85,000 BTU
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direct for complete
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TRUCK TANKS

- Twin or single barrel
- Light weight
- Low in cost
- Full or semi streamlined

ASME U69

Built to Your Specifications and Size

Write for Further Information and Prices

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slotted-cap JET

Barber Burners equipped with the famous Barber "slotted-cap" jets are available in round, oblong, and square shapes with inputs of 7000 to 198000 B. T. U.

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Cleveland 14, Ohio



Robertshaw-Fulton Opens Cleveland Service Office

The opening of a new Cleveland combination sales office and machine shop for the assistance of appliance manufacturers has been announced by F. H. Post, sales manager of the Robertshaw Thermostat Division, Robertshaw-Fulton Controls Co.

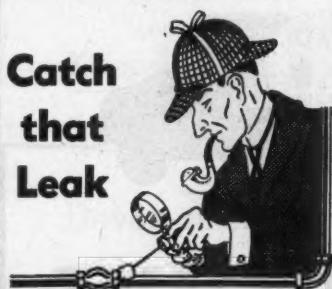
The sales office will handle all sales matters for the Cleveland district and the machine shop facilities will be available to appliance manufacturers who require such facilities while their appliances are being tested or

altered for test at the AGA Cleveland laboratory.

W. F. Cathcart will be in charge of the office with the assistance of L. V. Smith and Miss Evelyn Macerol. Miss Macerol was formerly associated with the AGA Laboratory, and her experience will be valuable in laboratory affairs.

The address of the office is 1535 E. 55th St., and manufacturers are invited to avail themselves of these facilities.

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of chemical-type leak detectors)

Magic Chef Plans Fall Promotion Campaign

Magic Chef, Inc. presented complete fall sales and advertising plans to approximately 175 distributors, distributor sales personnel, factory representatives, and management executives in St. Louis and Philadelphia recently. The sessions were split for the convenience of eastern and western distributors.

Marc Pender, vice president in charge of sales, keynoted the meetings which saw L. L. Peters, general gas range sales manager, A. R. Pierce, heater sales manager, J. J. Edwards, electrical products sales manager, and W. T. Trueblood, director of advertising and promotion, present their programs for fall, 1953.

Several new range and heater models were introduced which included: a new medium priced 39-in. gas range; a new super deluxe 36-in. gas range; three new top-bracket single and double oven 39-in. units; three new vented gas heaters and a new wall heater.

Also shown and demonstrated for the first time was the new "magic

flame" Uni Burner, a radical development that combines dual throated top burner performance with one-piece construction for maximum flame control and simplicity of handling. It is included on all new ranges.

Highlight of the meetings came when W. T. Trueblood unveiled fall ads and promotion strategy. Biggest punch is on gas ranges, and features a three-month "Life" magazine and national television advertising program. Six consecutive color ads will plug exclusive Magic Chef features in "Life," while showman-huckster, Dave Garroway, will demonstrate the same features on "Today," popular NBC early morning program.

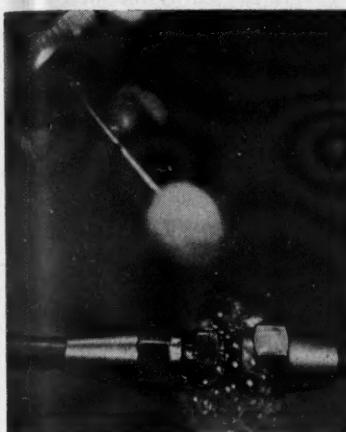
Theme of Magic Chef fall range drive will be "Change Your Range—change to a modern new Magic Chef!" This will be carried prominently in all national and local copy. Trueblood calls it, "The greatest 'Life'-TV merchandising promotion ever staged by a gas range manufacturer."

Chemical Leak Detector Proves Valuable Safety Aid

By Charles J. Handschuh
Chief Chemist
Winton Products Co.*
Charlotte, North Carolina

Imagine a leak in a gas connection so small that it only loses one pound of gas in 100 years! It is now possible, with the use of an inexpensive chemical fluid, to exactly pin-point such a tiny leak in a matter of seconds.

This product contains no oil, soap or grease, and when applied to any tube connection, pipe joint, tank seam or surface under gas or air pressure it forms foam or bubbles almost instantly if a leak is present.



Recent tests made with the chemical-type detector at a large automobile and refrigerator manufacturer disclosed some spectacular results. In one case, a refrigerator compressor was losing Freon gas at the rate of one pound in 87 years, and the leak was spotted within five seconds.

The new leak detector may be applied in several ways. On tube or small pipe connections it is usually flowed on with a dauber or swab. On large connections or tank surfaces it may be applied with an ordinary paint brush. For hard-to-reach places, such as refrigeration condensers and evaporators, an ordinary oil can may be used for squirting the fluid.

Thousands of companies in practically every branch of industry are using this leak detector, including LPG dealers and bulk plant operators.

The product is a neutral solution which is non-inflammable, non-injurious to the skin and non-toxic. It does not corrode metals or affect rubber, plastic or fabric. Tests at commercial and government laboratories have proved the safety, dependability and efficiency of the new fluid.

*Manufacturers of Sherlock Low-Temp leak detector.

A Great Team!

by **Thermolaire**



CIRCULATORS UNVENTED
Interiors well baffled with aluminum coated steel providing cooler cabinet. Sizes to meet your exact needs.



CIRCULATORS VENTED
A distinctive and beautiful cabinet in all sizes for use when venting is required or preferred.

Radiants interchangeable — Cast iron burners with interior baffle and raised ports — Chrome hearths — Finished in a gracious copper-tone baked enamel — All AGA approved.

THEY SCORE!

58% of our entire 1952 output went to the LP gas operator — an excellent measure of performance.



BIRMINGHAM STOVE & RANGE CO.
BIRMINGHAM 2, ALABAMA

EVEN IF YOU DON'T SMOKE!



SAVE BETTER THAN 50% from \$10.95 retail! Wholesale prices below are available only to the L. P. gas industry and suppliers:

50 or more — \$4.95 each 7 thru 24 — \$5.95 each

25 thru 49 — \$5.45 each 1 thru 6 — \$6.45 each

Refill tanks — \$5.40 per dozen

Official three color L. P. gas flame — 50¢ each additional
Firm name (orders of 12 or more only) — 50¢ each additional

Terms: Cash with order. Samples shipped C.O.D.

**THE PERFECT GIFT OR CHRISTMAS PRESENT. SMARTLY
GIFT BOXED. ORDER SAMPLE TODAY!**

MARSH'S
MEMPHIS 18, TENN.

Phone: 62-3521

SAVE \$7.30
on this
**SPECIAL TWO
TANK HOOKUP**



**NEW
LOW
PRICE**
\$9.55
in lots of 10

In answer to the many requests of our customers for a packaged deal we are making this special offer with a low price of only \$9.55, in lots of 10. The two tank package consists of one Rego regulator—5714S, 2 pigtail, T check & bracket and complete hood assembly. Our regular price—\$10.28 (\$4.83 for Regulator, \$5.45 for Stand). You save \$7.30 as sold in lots of 10.

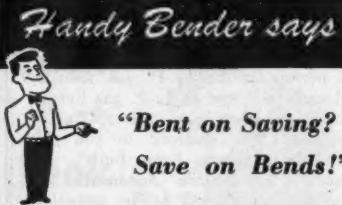
HOME GAS EQUIPMENT CO.
Dept. 2B, 1301 Carnegie Ave.
Cleveland, Ohio



QUALITY PRODUCTS

REGO LP GAS EQUIPMENT

- Rochester Criterion Gauges
- Hose and Fittings
- Weco-Trol (Automatic control)
- ICC Cylinders
- Okadee Valves
- Brunner LP Gas Compressors
- Liquid Pumps



Still using old-fashioned "el" fittings to turn corners? Then you are wasting time, and wasting money you could be putting in your pocket. Handy Benders eliminate the need for els by bending all kinds of pipe and tubing . . . as you go, right on the job . . . from $\frac{3}{8}$ " to $1\frac{1}{8}$ " O.D. . . . with a twist of the wrist. The money you save on your first job will probably pay the cost of this convenient, money-saving tool.

Ask your supply house, or write today to:

**HOLSCLOW
BROS., INC.**
414 WILLOW ROAD
EVANSVILLE, IND.



Handy Binder

to preserve your copies of the new size

**BUTANE-PROPANE
News**

A Beautiful DeLuxe Binder

These binders are made especially to preserve copies of your favorite magazine. Holds 12 copies—one full year. Magazines can be inserted or taken out in a second's time, or bound permanently for future reference. Covered with long-lasting maroon Du Pont Fabrikoid with the name Butane-Propane News stamped in gold on cover and backbone.

Send check for \$2.50 for each binder or \$3.00 from countries outside U. S.

- Add 3% Sales Tax for California orders, and 3½% Sales Tax for Los Angeles City orders.

BUTANE-PROPANE News
198 So. Alvarado St., Los Angeles 57, Calif.

**Safety Meeting Pays Off
For Indiana LPG Firm**

A safety meeting featuring the control and proper methods of extinguishing L. P. gas fires paid off in favorable public comment and orders for installations for its sponsor, Modern Equipment, Inc., Michigan City, Ind., L. P. gas distributors.

Seventy-two professional and volunteer firemen from the vicinity heard the program conducted by H. A. Goodwin, district sales manager of the Bastian-Blessing Co., and Emerson Houts, gas sales manager of Modern Equipment.

Commendable reports of the meeting were carried by the local newspapers, and one of the visiting firemen, impressed by the firm's attitude, placed his order for a 500-gal. installation.

**Oklahoma Firm Installs
Two-Way Radio System**

Installation of two-way radio equipment in their 17 company trucks has been announced by Elk City, Okla., LPG firm Howard Butane and Propane as a means of providing faster and more efficient service for their customers.

In announcing the addition of the two-way communication system, J. D. Howard, owner of the firm, reported that equipment had already been installed in headquarter buildings in Elk City, Clinton, Mangum and Leedey, and with the arrival of other necessary equipment, all trucks will be provided with direct contact with offices.

**California LPG Firm Doing
Business In New Plant**

The Bert King Butane Co., dealers of L. P. gas, service and appliances, is now operating from its new plant, located south of Twenty-Nine Palms, Calif. The plant, containing 1000 sq. ft., houses display rooms and offices of the company, with storage facilities nearby.

With storage capacity including one 31,000-gal. tank and two 5000-gal. tanks for propane and one 5000-gal. butane tank, the company operates five trucks, consisting of two 1000-gal. tank trucks, one bottle delivery truck, one installation truck and one pick-up truck.

Bert King, owner of the company, was recently elected president of the Liquid Gas Dealers Association of California.

Pamphlet 58 Changes (Continued from page 83)

been added: "Except in the case of trucks and passenger carrying vehicles, an atmospheric type regulator (zero governor) may be considered adequate for the shut-off device."

Division 5

5.2 - (f)

This paragraph allows the storage of small ICC specification containers having a maximum water capacity of 2½ pounds each, such as those used for hand torches or similar applications, for sale or display inside a store or place of business frequented by the public. The total storage shall be a maximum of 24 such units.

Appendices

Appendices should be examined for changes as they apply to your particular operations.

With the exception of the capacity requirements of paragraphs B.10 (d) 7, 2.3 (b) 1, and 2.6 (b) 2, discussed below, the maximum "1200" water capacity of "1200 US gallons" has been increased 2000 throughout the pamphlet. Paragraphs in which these changes have been made are as follows: Page 5, last paragraph entitled "Submittal of Plans", also B.2 (b); B.2 (c); 2.2 (d) 1; 2.2 (e); 2.2 (g); 2.3 (a) 5; 2.3 (c); 2.8 (c). B.10 (d) 7 - No change.

Minimum spacing for 2000-gallon tanks still remains 50 feet.

Maximum size tank allowed within 50-25 feet range still 1200 gallons.

2.3 (b) 1 - No change.

Maximum tank size in which fuse plugs may partially replace spring-loaded relief valves is still 1200 gallons.

2.6 (b) 2 - No change.

Maximum allowable size of containers installed on unprotected steel supports as in this paragraph remains 1200 gallons.

Additional copies of this Pamphlet 58 may be obtained from the NFPA, 66 Battery-march St., Boston 10, Mass., for 35¢, with discounts for quantity orders.

GAS DEALERS . . . Double Your Income

We are signing franchises with bottle gas dealers all over "hard water" America.



You have the set-up and the customers. Deliver rental softener units to homes, laundries, beauty parlors, cleaning plants . . . wherever soft water is needed.

Get a



Franchise

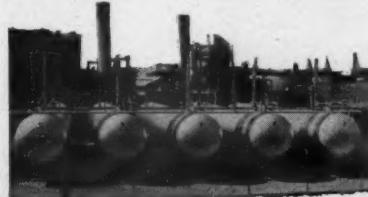
All you need are the softener units and the inexpensive regeneration equipment. Franchise includes the sale of DOWEX to all domestic, commercial and industrial areas.

Write, wire or phone

FILTER-SOFT Corporation

Dept. BPN
12911 ARTESIAN AVE., DETROIT 23, MICH.

PEAK SHAVER



BY DRAKETOWN

This packaged propane plant designed, engineered and built by Draketown, provides a completely interchangeable fuel for natural gas.

Draketown can design and build one for you, within your budget, to take over all or part of your load at the turn of a valve.

STANDBY
AUGMENTATION
100% TOWN OR PLANT SUPPLY

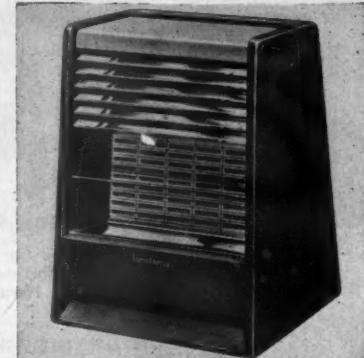
Serving utility and industry for over thirty years

DRAKE & TOWNSEND

INCORPORATED
Consulting • Design • Engineering • Construction
11 WEST 42ND STREET • NEW YORK 36, N.Y.

ARMSTRONG

Presents Their New
COOL CONSOLE



A brand new radiant heater for any gas—with top and sides cool enough to touch without getting burned.

This safety feature, added to Armstrong high quality workmanship and beauty of design, makes it one of the finest unvented circulators ever developed. Body is finished in an attractive new shade called "Mocha-Tone". 26" high, 14" deep. 16½" wide for 24,000 B.T.U., 19" wide for 30,000 B.T.U. AGA approved.

ORDER FROM YOUR JOBBER
or write for literature on the
complete heater line.

ARMSTRONG PRODUCTS CORP.
Quality Since 1899
Dept. BP



Huntington 12, W. Va.



REGO LP GAS EQUIPMENT

- Rochester Criterion Gauges
- Hose and Fittings
- Weco-Trol (Automatic control)
- ICC Cylinders
- Okadee Valves



P. O. BOX 566
2425 Caroline
DALLAS, TEXAS



Controls for water heaters, floor furnaces, wall heaters, and central heating systems are being turned out at this new \$2 million plant built by Minneapolis-Honeywell.

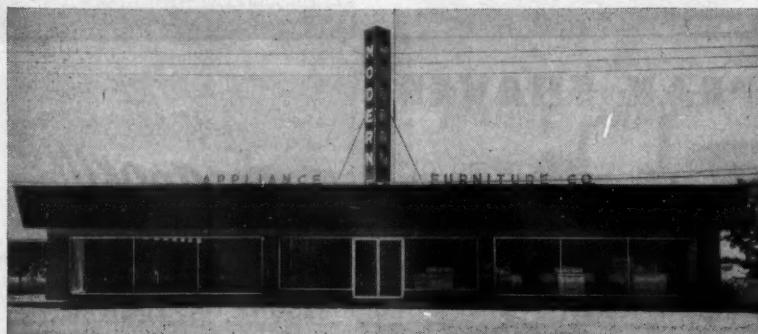
Production Begins In New Honeywell Plant

Limited production is now under way at the first unit of the new \$2 million plant of the appliance controls division of the Minneapolis-Honeywell Regulator Co. in Gardena, Calif. Construction continues on other sections of the structure.

The factory, the first plant built by Honeywell west of Minneapolis, will

produce controls for water heaters, floor furnaces, wall heaters, and central heating plants.

The new plant is of steel-frame, reinforced concrete construction. Two large parking lots will be provided on the 16-acre site for clients and the 2000 workers expected to be employed when the plant is completed.



Texas Dealer Makes Merchandising History

The Modern Appliance and Furniture Co., Victoria, Texas, celebrated its seventh year in business recently with the formal opening of a new store attended by more than 4000.

It's been seven remarkable, progressive years for the Modern firm and for its president, W. R. McCright. Established in January, 1946, as Modern Appliance and Butane Co. with Mr. McCright as head, the firm has expanded to cover seven counties with branch operations and has branch stores at Edna, El Campo and Cuero.

The new establishment, which occupies a site of 2½ acres on the

Houston highway just outside of Victoria city limits, provides ample parking space in addition to the 12,000 sq. ft. building which houses a complete line of furniture and appliances. The new one-story building was designed to meet the particular needs of the firm and to provide ample display space for merchandise. With the opening of the new store, the furniture and floor covering lines were added and the original firm name was changed.

Mr. McCright, a former president of the Texas Butane Dealers Association, will continue as the directing and operating head.

Anchor Names New Vice President



R. L. Cole

R. L. Cole, Western division manager of Anchor Petroleum Co., has been named a vice president of the company, according to W. A. Baden, president of the Tulsa, Okla., firm.

Cole will con-

tinue to manage Anchor's Western division, but Anchor's activities there will be greatly increased, Baden said. He stated that recently Anchor has consummated long-term contracts with several major producers for large quantities of butane and propane. Also, a number of tank cars have been added to Anchor's fleet so that Anchor can better meet the rapidly growing L. P. gas demands on the West Coast.

It is being contemplated, Baden stated, to open other Anchor branches on the West Coast in addition to the present Los Angeles office with the new branches to also be under Cole's supervision.

Cole has been with Anchor for five years, coming to them from The Texas Co.

Frank Perry Appointed To API

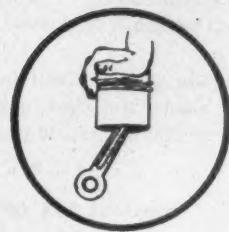
Frank M. Perry of Bartlesville, Okla., vice president in charge of natural gasoline and chemical operation for Cities Service Oil Co., has been appointed a member of the American Petroleum Institute's general committee on refining.

Perry, who is president of the National Gasoline Association of America, will serve with W. T. Gunn, who is a director of the API's refining division.

CNGA Plans Fall Meet In Los Angeles

The Ambassador hotel in Los Angeles will be the scene of the fall meeting of the CNGA. Chairman of the two-day affair, October 8 and 9, is D. R. Arnold.

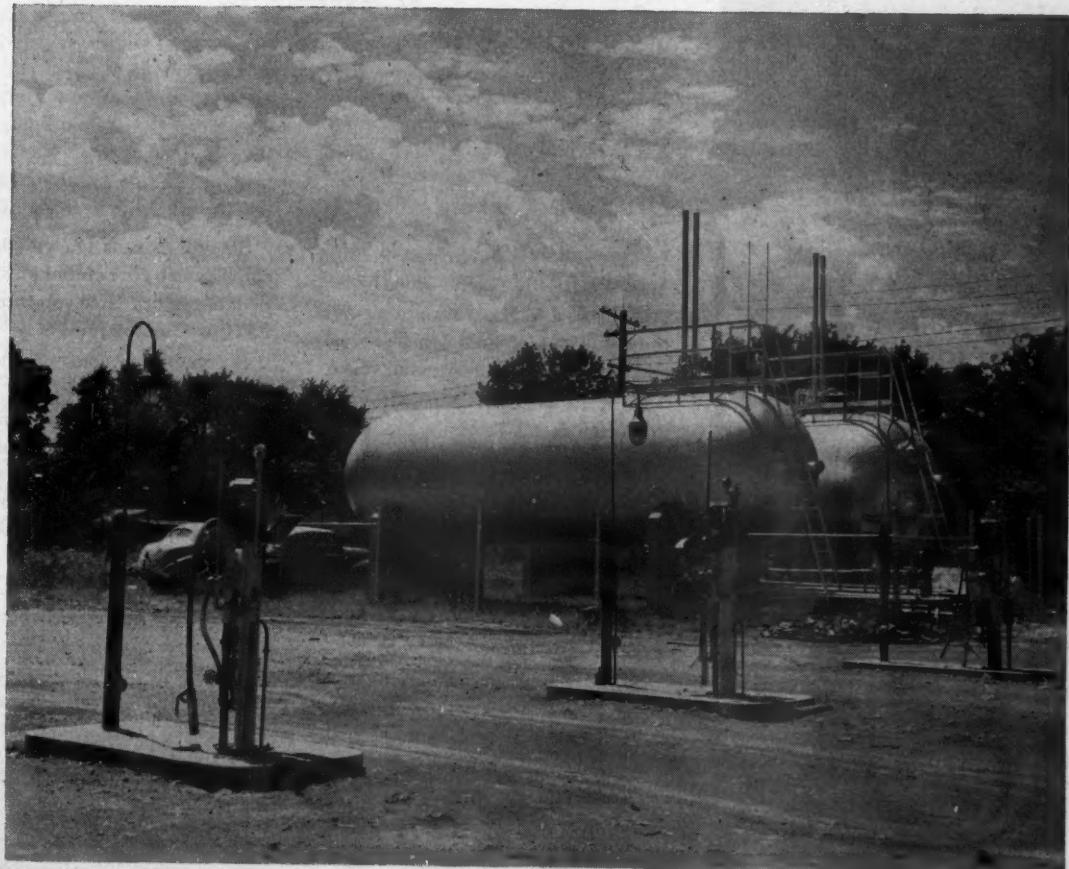
The meeting features a forum on gas gathering, including a field trip through the Union Oil Co. refinery at Wilmington, and such speakers as Dr. Harrison Brown of California Institute of Technology, Superior Judge Harold P. Huls, and M. E. Spaght, executive vice president of Shell Oil Co.



Butane-Propane

POWER SECTION

INSTALLATION • CARBURETION • SERVICING



Bulk storage plant and LPG dispensing units of the Wichita Transportation Co. for its fleet of propane buses.



Here's a challenge — straight from the pen of a man who knows all about the taxicab business.

"Out of 10,100 taxi operations in this country," he says, "sixty-six percent have expressed a definite interest in LPG. Cabs use 625 million gallons of motor fuel each year — and could use 60 million dollars worth of conversion equipment— yet the LPG boys keep looking the other way."

Mr. Kramer's article puts the spotlight on a market which deserves some serious thought and attention.

A Billion Dollar Market Goes Begging

By William E. Kramer

"A-T-A News"

Official Publication

American Taxicab Association

If you fell over a pot of gold, you'd praise Allah for your good luck.

Well, you've been stumbling over the same pot of gold for five years and you still don't know what it is.

Hard to believe? Not when you know the facts! Taxicabs are one of the nation's largest transportation systems. They gross more than a billion dollars a year. And a billion bucks will buy enough gold to fill anyone's pot.

Next to buses, taxicabs are your best bet for L. P. gas conversion. They are an enormous potential market and their demand would be steady and year-round. But you haven't made any effort to sell them.

In fact, most of the selling so far has been done in reverse: taxi operators have been trying to sell LPG dealers on the idea that taxi business is worth having. An A.T.A. member responded to one of our questionnaires recently with a tearful letter. An ambitious carburetion maker had sold him conversions for his entire fleet of 22 cabs, but nowhere could he find a fuel dealer who was willing to supply him.

Several months ago we (the American Taxicab Association) asked 3,600 fleet operators "Are you interested in LPG as a motor fuel?"

Sixty-one percent of the replies said "Yes."

Probably some of these were merely looking for more information. But at least they are interested enough to ask for facts. That means your selling job will be that much easier.

Response from larger operators was still more eye-opening. Of those with 25 cabs or more, 66 per cent said they were interested. Five per cent asked for more information.

As to the overall picture: There are 10,100 taxi operations in the country with 140,000 cabs. They also operate 40,000 buses, limousines, rental cars and trucks. That's a total of 180,000 units, which is no small potatoes, especially when you remember that 61 per cent of the owners are interested in converting.

In fact, we think prospects for conversion are so good that we came out flatfooted in the June issue of "A-T-A News" and did something we usually prefer to leave to Drew Pearson. We

predicted that during the next five years taxi operators will plunk down \$60 million for L. P. gas carburetion. Now all you have to do is deliver the goods.

That's what this article is about. It's to help you learn just what's in this \$60 million pot, and what's in it for you.

Reasons For Interest

Why are cab operators so interested in LPG? You'll find the answer in their profit-and-loss statements. The stretch between frozen fares and rising costs is getting to the point where something's got to give. About 30 fleets have already given—they switched to propane.

The first nationally-publicized conversion of a taxi fleet was back in 1949 when the Liberal Taxi Service, Liberal, Kan., made the plunge. Cliff Hill, owner, wrote us, "I'm really sold on this stuff. I can easily say that engine life has more than doubled since we started using propane. In fact, I don't know when I'll have to install a new engine; my first unit is still going strong after 87,000 miles."

Hill's letter was what first got us interested in the possibilities of L. P. gas for the taxicab industry. Since then we have published nearly two dozen articles in "A-T-A News" covering all aspects of the subject. This publicity, plus discussions at conventions, is what has stirred up so much interest among fleet operators.

The biggest story was when John

Boynton, Yellow Cab Co., Milwaukee, announced the results of his first year's experience with LPG. Boynton, who keeps meticulous records, said he was saving \$30,000 a year over gasoline. Statements like that make the industry prick up its ears.

Other reports we've had have been just as enthusiastic. Average claims are that LPG saves 30 percent on maintenance and 20 percent on fuel costs. Now, his gasoline bill is the biggest single expense a cab operator has to pay, and maintenance runs a close second. Is it any wonder taxi operators are so interested?

From where we sit, the outlook adds up to the start of another plunge very much like the one into two-way radio over the past seven years. The big difference, of course, is that radio manufacturers jumped right in from the start. They did an all-out sales job and created a market where none had existed before. Constant advertising, hundreds of direct mailings, exhibits at every trade show, personal calls and every other device known to selling were used.

In 1946 you never heard of a cab fleet being dispatched by radio. Today, more than 60 percent of our industry is on the air. The total cost so far has been \$50 million to fleet owners, and expansion is still going on.

The reason radio manufacturers had such overwhelming success is simply that radio really paid off. Fleets handle 20 to 30 per cent more fares with the same number of cabs—and at the same time cut their unpaid mileage.

Propane looks just as promising. With it even the smallest fleets stand to gain. That's why we think eventually our whole industry will convert; at least in every area where there is enough fuel on hand on a year-round basis.

Why So Few Conversions?

So far, though, only a few fleets have taken any real steps toward conversion. Why? you ask. You should know the answer to that. The main reason is that you never suggested that they convert. You never sent a salesman to call on them; you've never offered any proposition. You've never advertised, or exhibited at their conventions. In fact, you've never done anything. And now it's our turn to ask why?

The reason for your negligence, we think, is that you didn't realize the tremendous size of the market here. Nor did you think that our methods of operation made the use of LPG feasible.

A few weeks ago the sales manager of one of your largest producers of L. P. gas told me he didn't think it was safe to use propane in taxicabs.

"Why is it less safe in cabs than it is in trucks or buses?" I asked.

"Well," he said, "suppose the driver has a breakdown and starts tinkering with the fuel or carburetion system. He could cause an explosion. Cab companies don't have any control over their drivers."

There's no sense arguing with a fellow like that. In his mind he pic-

Fueling station used by Chicagomobile Power Corp. for servicing American-United Cab Co. Milwaukee Yellow Cab Co. operates its own tank truck and service station setup which cost well into five figures.





LPG conversions mount fuel tank in trunk of cab along with radio equipment (left arrow). Vented safety valve (center arrow) makes this possible. Leak-proofing between trunk and passenger compartment (right arrow) precludes danger of combustible mixture in passenger section.

tures the taxicab industry as a conglomeration of irresponsible rabble tearing about the streets at the risk of everyone's life and property. Thirty years ago that may have been a fair-to-middlin' picture in some areas; the cab business was in its infancy then. Since those days, however, we have made a lot of progress.

Taxicabs aren't peanuts any more. They're big business. They operate like big business. The government classes them as an essential industry. Fleet operators conduct driving schools for driver applicants. They carry on extensive safety programs. Many are members of the National Safety Council. Others follow procedures set up by their insurance companies.

Today Mr. Average Cab Operator has 14 cabs, two rental cars, a limousine and a bus. He has his own garage and offices. He runs his own maintenance shop; has his own fuel storage and pumping facilities. He may even have a body and paint shop. Most larger fleets do.

Cab operators spend more than \$850 million yearly to keep their equipment on the streets. Their gross take is a billion dollars a year, just on cabs alone. They buy 625 million gallons of fuel annually. Then in addition they run thousands of school buses, limousines, tow trucks and other vehicles which we don't even consider in our figures. Except for rental cars, their other operations are just as good prospects for propane as the cabs themselves.

Getting back to the safety angle, it doesn't make any difference whether the conversion is done on a truck or a taxicab; the same techniques are

involved and the same carburetion manufacturer is supervising the job.

Not only that, whenever a cab company considers conversion they find the city fathers, the police and particularly the fire department breathing down their necks. With all this advice and supervision, it would be pretty hard to put in an unsafe conversion.

An added incentive is that cab operators are extremely public-relations conscious. They have to be to stay in business. And they know that a bad accident may spell the end not merely of a vehicle but of their entire business. That's why they are just as concerned over the safety of LPG as any manufacturer.

This concern for safety has actually kept some operators from converting.

They hesitate to put a propane fuel tank in a taxicab trunk along with their two-way radio unit. You see, when a mobile radio unit "activates" to send out a message, a spark is sometimes created. Some owners have been afraid of what could happen if spillage accumulated or the safety valve leaked at the same time the mobile unit sparked.

Recent conversions take these things into consideration. For instance, Chicagomobile Power Corp. has come up with a simple, inexpensive method of sealing off the trunk from the passenger compartment. They also vent the fuel tank safety valve outside the trunk, and then ventilate the trunk itself through holes in the tire well. So far they have converted about 90 radio-equipped cabs in the Chicago area.

A Stumbling Block

The only other major stumbling block to taxicab conversions has been the same obstacle you face with many truck and bus conversions: some city ordinances make L.P. gas storage in the city limits virtually impossible. Sometimes this restriction makes it unprofitable for a cab operator to convert to L.P. gas.

That's no reason to give up. There are many ways to change foolish restrictions. Concerted action on the

Service unit sold as package deal by Chicagomobile Corp. includes 1000-gal. tank, dispensing equipment and mesh wire fencing. This unit sells for about \$2,500 f.o.b. Chicago.



parts of the local cab operator and the L. P. gas supplier probably could result in revising many unfair ordinances.

The fears expressed by local fire prevention and safety groups can be met with calm, reasonable explanations. You can point out that with proper handling L. P. gas is as safe as gasoline. Even insurance companies don't look on it as a threat. Rates are not usually raised just because a fleet converts to propane.

Price Not Major Factor

While price is definitely a factor, the cost of conversion alone won't persuade or discourage fleet operators from converting. We've heard complaints that prices are too high, but there were the same complaints with radio. Generally, LPG conversions cost about the same as radio.

If price should happen to be a stumbling-block, then there are many ways to handle that situation. For example, when Chicagomobile Power Corp. took on the job of selling LPG to the American-United Cab Co., they found they had bit off a hunk.

American-United is composed of 300 independent driver-owners. Any one can tell you that selling to independents is the toughest thing in business. In the first place, an independent seldom has much money and can't afford to pay for expensive equipment. Secondly, he doesn't want to take on any risks. One failure and he's broke.

Besides, when you're dealing with independents you have to spread your sales efforts among all of them instead of being able to concentrate on the company manager.

So far, Chicagomobile has sold 90 independents, and in another year expects to be doing a land-office business. Their method was simple: the cab owner doesn't pay a cent for the conversion. He simply contracts with Chicagomobile to pay five cents a gallon more than the regular price of L. P. gas until his conversion equipment is paid for. At that he still saves maybe a cent a gallon on fuel, even while he's meeting his payments.

Other carburetion distributors have worked out similar deals with similar good results. A painless financing arrangement provides a real inducement to a prospective buyer.

Here Are "Selling Points" On Economies of Propane

In the first 25,000 miles of operation on propane you will save:

14 oil changes	1 set spark plugs
20 per cent on fuel	1 carburetor overhaul
6 oil filter cartridges	plus no fuel pump failure

The second 25,000 miles:

14 oil changes	1 carburetor overhaul
20 per cent on fuel	plus no fuel pump failure,
6 filter cartridges	no valve or ring jobs
1 set spark plugs	

The third 25,000 miles:

1 engine overhaul	20 per cent on fuel
1 valve job	1 carburetor overhaul
14 oil changes	6 filter cartridges
1 set spark plugs	plus no fuel pump failure

The fourth 25,000 miles:

14 oil changes	1 carburetor overhaul
1 set spark plugs	6 filter cartridges
20 per cent on fuel	plus no fuel pump failure

Overall savings for 100,000 miles: Approx. \$500.00

(These figures reported by Chicagomobile Power Corp., Chicago.)

When volume sales set in, we can look for conversion prices to come down. Present conversions are expensive, and the fact that there isn't much competition and not very much volume doesn't help. As competition increases, prices will be forced down and business will pick up.

But the day of big volume in the cab industry may be a long way off if you keep on searching the clouds-banks for a silver lining, all the while cursing the pot of gold at your feet are stumbling over.

If you want to cash in on your wind-fall, get in and give it a little push. Try advertising and direct mailings. Stimulate a few itching palms by showing taxi operators how L. P. gas means greater profits. Schedule working demonstrations at their confer-

ences and conventions. Get on the convention program and tell them about it.

Local L. P. gas dealers would be smart, too, to put in a few personal calls on cab operators and discuss conversion with them. Get your facts in hand, have a proposition ready, and go calling. And don't forget that if you sell an operator on converting then he'll be in the market for torches and other appliances.

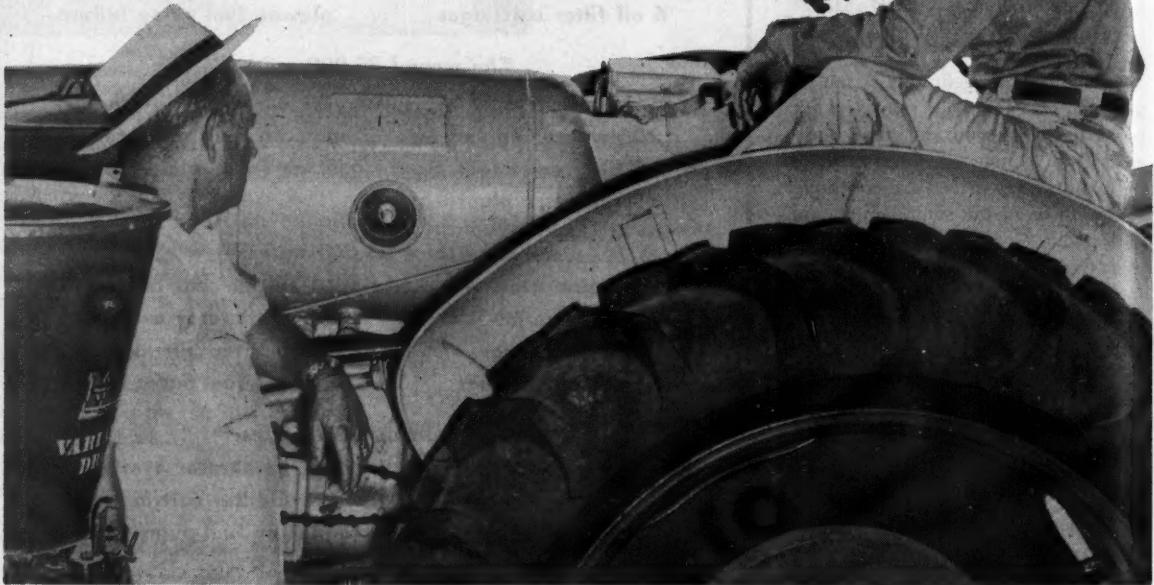
There will be problems, but the only way to whip them is to get in and try.

Get your national supplier and manufacturer behind a national sales promotion campaign.

Let somebody know you're alive! Don't let a billion-dollar market go begging!

Tractors Keep Summer Volume Up

By Patrick J. Galvin



A butane tractor is kept on display so farmers can look it over. Al Foster (seated on tractor) tells L. B. Kiker how LPG has cut his fuel bills in half.

THE perfect way to beat low summer volume in butane is through supplying butane as fuel for farm tractors, according to L. B. Kiker, manager of Dees & Kiker, Waxahachie, Tex.

And the most satisfactory way to create that warm-weather market, says Kiker, is to obtain a tractor agency and sell the tractors first, equipped to run on L. P. gas.

"This is the perfect combination—perfect," in the opinion of Kiker. "The gas business is based on five months of profitable operation and seven months of sweating it out. Normally, when I sell 1,000,000 gallons per year, 750,000 of it is sold during the 5-month period. Then I have a devil of a time disposing of the other 250,000 gallons in seven months. And I'm only guaranteed as much bulk in the winter as I bought in the summer, so I have to

go to the open market to buy and pay twice the price.

"The summer load has to be built up. With farm tractors, they are in season during those seven months that ordinarily are slow. They are just as seasonal as heating, but their season is just the reverse. They mesh perfectly, and they're the answer to the problem."

Dees and Kiker have been in business in the Waxahachie cotton country for seven years, but added the Minneapolis-Moline farm machinery agency only three years ago. They were handicapped for two years by the fact that the only butane-equipped tractors available were too large for the type of farming done in their area. But they found farmers sufficiently interested to buy anyway, and in their first year they sold 125 tractors. Many of these operated on gasoline

because of the size factor, and were purchased by farmers who expected to trade them in at a later date when smaller butane-equipped tractors became available.

The firm has been further handicapped by two years of severe drought in the area. "Everybody wants these tractors," says Kiker, "but what are they going to do? When they can't raise a crop they can't very well buy a tractor. But despite this, we know very well what the demand is because the farmers and ranchers gather in here to do their talking. When they do they look at the literature I have around the walls, and the little folders in the racks. I always have a tractor on display so they can sit on it and look it over."

"Before we started selling farm machinery, the men would drop in to talk, but it wasn't nearly as good as

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IN GREAT NEW MEDIUM-DUTY INTERNATIONAL TRUCKS!



New INTERNATIONAL RP-160 Series with LPG power. (Gasoline power also available.) GVW ratings, 14,000 to 17,000 lbs. 130, 142, 154, and 172-inch wheelbases. Single or dual heavy-steel pressure fuel tanks with 4 to 1 safety factor. Automatic safety relief valves on tanks and fuel lines vent vapors high above ground through large capacity stacks. Automatic excess flow valve shuts off fuel supply in case of fuel line breakage.

It's another first from INTERNATIONAL! The first medium-duty trucks with factory-installed LPG fuel systems to receive Underwriters' Laboratories listing.

With these new INTERNATIONAL RP-160 Series Trucks you can count on high compression power, greater engine efficiency, and longer engine life. Now all the advantages of the famous INTERNATIONAL Silver Diamond 240 engine are combined with the benefits of the LPG fuel system—

High compression ratio of 8.4 takes full advantage of the extra power in high octane LPG fuel.

Lower maintenance because LPG is a dry gas

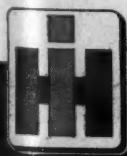
and will not wash down cylinder wall lubricants. Carbon deposits practically eliminated. Engine wear and cylinder erosion reduced. Oil less contaminated.

Latest safety features, including new submerged-type safety relief valve in each tank.

Along with smooth, high compression LPG power, you get the extra stamina and the extra driver comfort built into every INTERNATIONAL.

For full details about the new RP-160 Series, see your INTERNATIONAL Dealer or Branch—soon! Time payments arranged.

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International Harvester Builds MCCORMICK® Farm Equipment and FARMALL® Tractors... Motor Trucks... Industrial Power... Refrigerators and Freezers
Better roads mean a better America

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"Standard of the Highway"



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Butane-Propane Carburetion
for

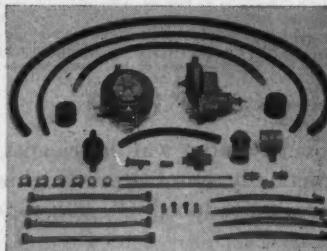
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There is a BEAM for all LPG engines. Various carburetors available; including straight LPG carburetors, combination carburetor adapters, and spud-in blocks for all type installations.

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UNIVERSAL PRODUCTS, INC.

LPG Carburetion Division
6918 Lindberg Street, Houston 17, Texas

it is with the equipment. When I have a lot of equipment on the floor they really have something to talk about. They like to look it over and handle it. And that means business. Sooner or later, it means business."

In these groups, customers who already own Kiker's butane tractors are his best salesmen. One farmer, Al Foster, was one of the first to buy. "It used to cost me \$2,300 per year for gasoline." Foster said, "I've got 400 acres I'm farming, and I've got all these gas heaters and appliances Kiker's selling. I use about 5,000 gallons of butane a year and my entire fuel bill runs only about \$500 a year now. A man just can't farm with gasoline."

Some of this saving, of course, can be chalked up to curtailed operations because of the drought, but much of it comes from the lower per gallon cost of the fuel, and the greater efficiency.

That kind of economy is one of Kiker's main sales points. He plays it up in his weekly advertising and in his sales talks. The net cost of gasoline to a farmer, he points out, is 16 cents per gallon. The cost of butane averages about 50 percent cheaper, depending on the freight haul. In refinery areas in Texas it runs as cheap as 6 cents per gallon. "It's a better fuel by 10 to 1" is his contention, and he repeats it to everyone who comes within earshot. "Every bit of it burns, so there's no carbon and there's a cleaner engine. Turn a tractor over

with gasoline and you're in danger. With butane there's no danger of fire. You just turn it back and keep on working."

Such sales points as those make a pungent kind of sense to the farmers, accentuated by the fact that in drouthy periods they can't afford that extra cost for other fuels either in the initial purchase or in the maintenance of engines.

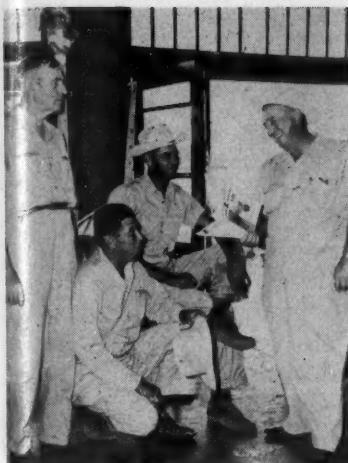
While Kiker has found tractors and L. P. gas to be the perfect combination, he also has found it practical to extend in other directions. To carry tractors without carrying other farm equipment would be throwing away customers, for many farmers prefer to buy complete sets of equipment with the same brand name and many others want to give all their business to one firm. Often to sell a tractor is to sell everything a farmer needs as long as he can be kept satisfied. So Kiker stocks grain drills, disk harrows, combines and other such items.

Nor can the farmer's wife be ignored. She is the one who selects the refrigerator, the range and other appliances. With the farm trade coming into the store, again it would be throwing away customers to ignore these many other gas-burning items. So the huge Dees & Kiker store is a mixture of trim, gleaming kitchen equipment and strictly utilitarian looking machinery.

To Kiker, of course, it is much more



Dees and Kiker win farm business with tractors—then use display space to sell gas appliances to wives. Note literature display rack above range.



Farm equipment is conducive to gathering of groups in the display rooms—which helps a sales talk go a long way.

than a matter of initial sales profit. He wants to build up that summer load. "Put it this way," he explains. "The butane business is wonderful, potentially, but it has to be built up right. I have an area here with a 25-mile radius. Beyond that the truck expense would eat up the profit. I service it like a milk run. I have routes and I never ask the customer if he needs gas. I fill his tank when he needs it."

"I fill the 150-gallon tanks on a 30-day schedule, the 250's on a 45-day schedule, the 500's every two months. The 1000-gallon tanks I fill once per



Posters always find a conspicuous spot on the wall so that they can do a silent selling job at all times.

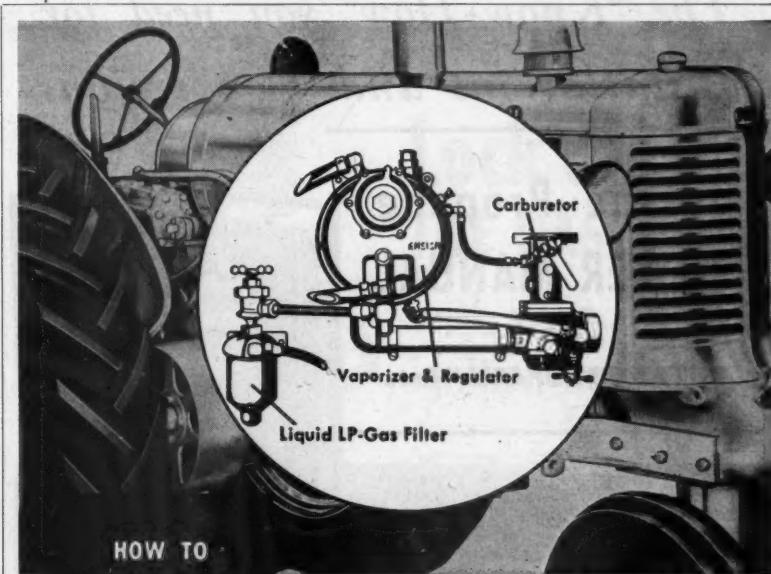
year, in the summer time. The average family uses 600 or 700 gallons per year and needs 300 in reserve.

"Now, if I could sell all these people on 1000-gallon tanks and fill them in the summertime they could get their gas 5 cents per gallon cheaper and this business would be perfect. Neither one of us would have any worries.

"That's what tractors can do for me. Butane doesn't deteriorate with storage like gasoline does. If I can get

my area blanketed with tractors that burn L. P. gas, and then as a second step sell everyone on 1000-gallon tanks, they'd save hundreds of dollars per year. And I'd have a perfect business. Some of them, of course, never use tractors. I'd like to build them up with gas appliances.

"That's what tractors can mean to a dealer. They can bring his summer load up to the winter level, and they can pave the way for big tanks. It's a perfect combination."



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PERFORMANCE
FROM
LP-GAS



Best tractor performance on LP-Gas is the result of air-fuel ratios for combustion which are exactly right for every operating condition. For example, air-fuel mixtures for starting are entirely different from those required for full load or for long periods of idling.

The job of good carburetion is to vaporize the LP-Gas and to proportion it with correct volumes of air for perfect combustion; richer for starting, leaner for part throttle and slightly richer again for full load.

Ensign equipment is designed to produce the correct mixture automatically for variable loads and at the same time obtain maximum economy. When you convert a tractor to LP-Gas insist on Ensign, the carburetion leading tractor builders choose. You'll discover why Ensign is "STANDARD OF THE INDUSTRY". Send today for complete information.

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7010 S. Alameda St., Huntington Park, California
Branch Factory: 2330 W. 58th St., Chicago 36, Illinois

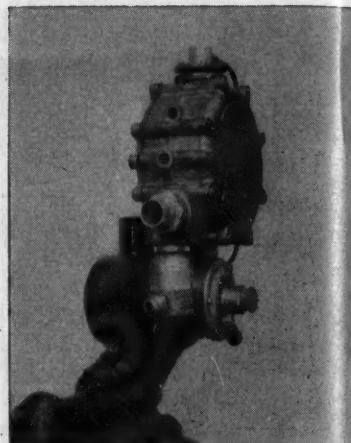
DEALERS AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

J & S Carburetor Builds New Conversion Unit

A new Ford V-8 conversion unit is being manufactured by the J & S Carburetor Co. This compact unit mounts right on the cylinder head in place of the thermostat housing, and needs no extra water hose or special mounting bracket. There is no need

to drill holes in the firewall or fender for mounting.

The kit is obtainable with the carburetor section factory-spudged for gas, if desired. This eliminates the tricky job of drilling and tapping the dual venturi carburetor in the field.



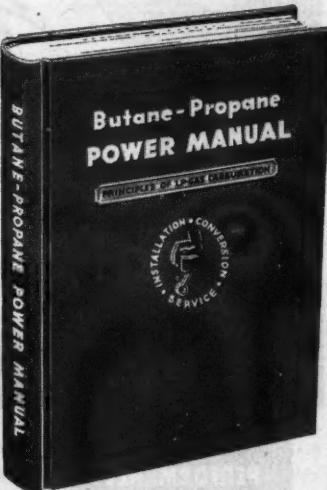
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Installations and Conversions*

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Published by

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Here is the first authoritative guide ever published for the rapidly expanding LPG power market. Basic facts of engines, fuel, and power are given in easy-to-understand language; then careful directions and clear illustrations take you step-by-step through installations, conversions, servicing . . . everything needed in a practical working manual for practical men. Nearly 5,000 copies of the BUTANE-PROPANE POWER MANUAL have already been sold.



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1. The Nature of L. P. Gas
2. Basic Engine Facts
3. Basic Facts of Fuel Combustion Engines
4. Factors Affecting Operating Economy and Power
5. L. P. Gas Carburetion Systems
6. Regulating Gas Pressure and Temperature
7. Fuel Supply System, Vehicle Tanks and Equipment
8. Natural Gas Carburetion
9. Planning the L. P. Gas Installation
10. Checking the Engine's Condition
11. Raising the Compression Ratio
12. Cooling the Intake Manifold
13. Ignition Problems
14. Tractor Conversions
15. Truck and Bus Conversions
16. Passenger Car and Taxicab Conversions
17. Industrial Engine Conversions
18. Installing and Adjusting L. P. Gas Carburetion Systems
19. Manufacturers' Instructions for Adjusting L. P. Gas Carburetors
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22. Safe Storage and Handling of L. P. Gas
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BUTANE-PROPANE News, 198 S. Alvarado St., Los Ang. 57, Cal.

All necessary hose and fittings are furnished for quick, easy installation.

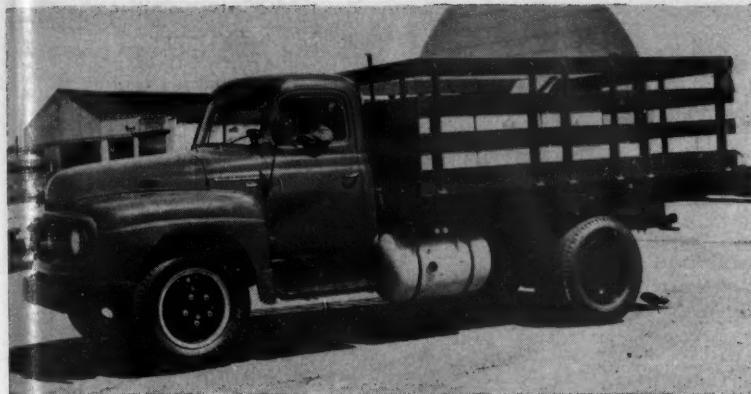
The unit illustrated is for Mercury and Ford V-8 cars, and Ford V-8 trucks, models F-1 through F-6. A similar unit is available for Ford F-7 and F-8 trucks and industrial engines, with the factory-spudged carburetor body optional. This line of special units also includes the FT-1 unit for the 1953 Ford tractor, which is also mounted in place of the thermostat housing and is available with spudged throttle body.

These compact kits feature the tiny new No. 302 filter, so light that it does not require bolting down, and a new type vaporizer made in the shape of a corrugated brass cup, of small size and high gallons-per-hour capacity. The Ford tractor kit uses the J&S No. 344 regulator, while the other two units have the standard J&S BR regulator.

Chicago Adds Propane Buses

An additional order for 100 51-passenger propane-fueled buses was jointly awarded The Flxible Co. of Loudonville, Ohio, and Twin Coach Co., Kent, Ohio, recently, by the Chicago Transit Authority. Price of each bus was \$19,945, for a total of \$1,994,500.

This order raises to 400 the number of propane-powered Flxible-twin coaches now on order by Chicago. A previous order for 300 units was received late last year. These 400 buses represent a total investment of \$7,739,000. When the new Flxible-Twin coaches go into service in Chicago, that city will be operating nearly 1,000 propane vehicles. This is the world's largest propane bus fleet. Over 900 of these buses will be Flxible-Twins.



LPG Models Announced By International Harvester

International truck model RP-160 with liquefied petroleum gas fuel system is one of five medium-duty LPG models placed in production by International Harvester Co. The company is the only truck manufacturer to offer Underwriters' Laboratories listed factory-installed LPG fuel systems in this weight class.

The series of LPG-powered models ranges in gross vehicle weight from 14,000 to 17,000 pounds. The models are the RP-160, RP-161, RP-162, RP-164 Loadstar for heavy hauling, and RP-165 Roadliner for over-the-road tractor service. Engine is the 108-horsepower, valve-in-head International Silver Diamond 240.

Le Roi Company Adds New V-8 Engine

Le Roi Co., Milwaukee, manufacturer of internal combustion engines and construction and mining equipment, has announced the addition of an 844 cu. in. displacement, valve-in-head, V-8 industrial engine to its line of internal combustion engines, according to J. E. Heuser, sales manager of Le Roi Engine division.

Designed to provide continuous heavy duty service over a wide range of speeds up to 2000 rpm, the LeRoi H844 is a sister unit to the well known H540, which has proven itself in the oil fields as a power unit in electrical generating sets and on irrigation applications.

The unit is designed along rugged modern V-8 lines, and features removable wet-type cylinder sleeves, cam-ground aluminum pistons, a gear-driven water pump, an extra heavy counter balanced crankshaft, full-pressure lubrication, and water cooled manifolds.

These same features in the Le Roi

H540 have set new standards in dependability and economy in engine performance for industrial applications. The H844 will be especially welcomed in the petroleum industry where it will be used in slim hole drilling rigs, work-over rigs, well servicing equipment, oil well pumping, and pipeline applications. The H844 develops 210 hp at 2000 rpm, according to Mr. Heuser.

The H844 can be equipped to burn natural gas, butane-propane, or gasoline.

**Lock off
THE GAS**

**with your
ignition key!**

Century Converter
or Heat Exchanger
for LP-Gas

Century LP-Gas
Carburetors Available
for all Engines

WHEN YOU TURN OFF your ignition key the Century Fuelock cuts off the LP-Gas against any pressure. Operating by magnetic action this simplest and smallest of locks draws no more current than the average truck's dash light. It fits neatly on top of the Century Strainer and in this position gives positive protection because scaling copper lines are eliminated.

The newly improved Century Strainer and Fuelock combination keeps scale and other foreign matter from reaching the con-

verter's valves. It is your best insurance against leaky valves in your LP-Gas converter. Installation is easy and it requires no attention beyond an occasional cleaning. Century Carburetion for all engines includes a Strainer, Fuelock, a Converter and Carburetor.

Century LP-Gas Carburetion equipment is made with precision steel dies of light, strong and attractive aluminum alloys. These alloys cannot rust. They resist corrosion by chemicals, conduct heat efficiently.

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SET IT! SEAL IT! FORGET IT!
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FARMALL: "M", W-6, I-6, T-6, U-6,
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Here's a new automatic valve, designed to withstand the unusual road vibrations of mobile equipment, with positive operation in any position. Continuous duty coils, completely sealed off from fluid, give extra long life and allow prolonged energization with low current drain and with no harm to the coil. Available for use with both gasoline or butane.

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John Deere Model "70" factory-equipped L. P. gas tractor, showing compact and protected mounting of carburetion units, and fuel tank.

John Deere Introduces Two New LPG Tractor Models

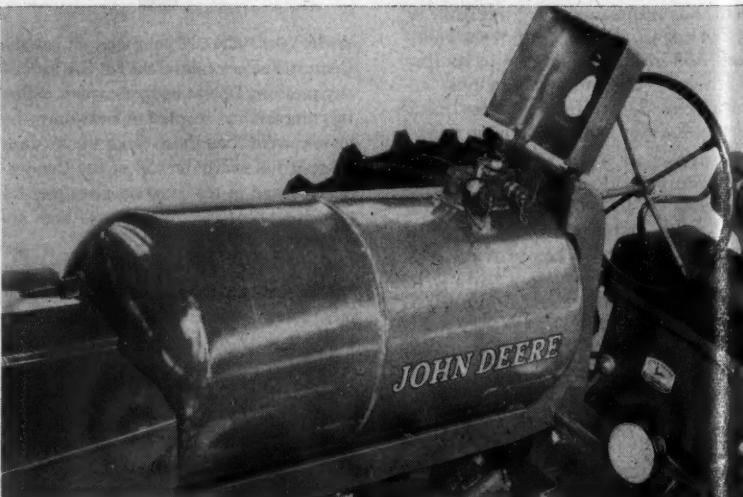
John Deere "60" and "70" tractors, specially equipped to burn liquefied petroleum gas, are now in production at the John Deere Waterloo Tractor Works, Waterloo, Iowa.

According to company representatives, the L. P. gas tractors develop essentially the same horsepower as the "60" and "70" with gasoline-burning engines. In addition, these new tractors are available in both general-purpose and hi-crop models. The "60" replaces the former Model "A," which was one of the most popular tractors in the John Deere line.

Among the engineering modifications made in these new L. P. gas burners are higher compression ratio, cold manifold, special dual carburetor, and new type ignition with a re-

sistor by-pass. Carburetion equipment was produced by Century, including the development of a complete carburetor model for the John Deere tractor.

Operator's view from the tractor seat is rated as excellent, due in an important measure to the longitudinal mounting of the fuel tank, which is produced by Pressed Steel Tank Co. Filler valves, pressure relief, and outage indicator are mounted in a cluster fitting at the top of the tank, while the liquid and vapor withdrawal valves are in a protected location at the lower left hand side. A direct reading fuel gauge, visible from the driver's seat, is installed in the rear end of the tank.



Longitudinal tank mounting provides excellent protection for all fuel valves and fittings. Steering column passes through welded-in tube.

Hauling Propane . . .

(Continued from page 79)

checked for any metal or foreign matter which might harm the engine. We operate our own repair shop to help keep the trucks in first class shape at all times.

Being located in the heart of the New York metropolitan and resort area, one of the biggest problems with which we must contend is the congested traffic conditions. While highway departments are improving the roads for greater safety, there still remain many narrow bridges, winding roads, and steep grades that must be traveled to bring L. P. gases into the back yards, so to speak, of the individual consumer.

The accounts handled by this company are of four major categories. We serve the bulk plant operator who bottles and wholesales to jobbers for consumer use and also retails direct to consumer for use in space heating, cooking, hot water, refrigeration, and chicken brooding. In the New England states the use of LPG for tobacco drying has become of great importance.

The use of LPG in industry is also increasing steadily. This is due to the high Btu value of propane as compared to other forms of fuel and also to the constant, even heat given without variation. This steady heat is especially necessary for particular types of heat treating work and is very favorable for forging purposes.

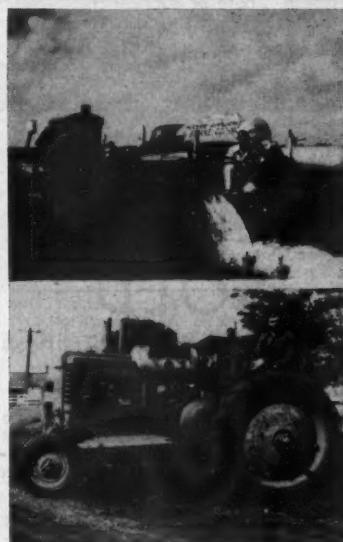
Another type of user is the utility company. Utilities use LPG in conjunction with natural gas or manufactured gas. Others utilize the fuel as a stand-by for peak sharing.

The multiple type housing projects find the use of L. P. gas very favorable and efficient for normal household uses such as gas cooking and refrigeration from one source of supply.

Of the total installations served, approximately 46% of our service goes to the bulk plant operator; 44% to the utility group, and approximately 5%, each, to the industrial and multiple housing users.

While we find the average bulk plant storage to be 30,000 gallons, they do run as high as 90,000 gallons. Storage at the average industrial user's facilities is approximately 30,000 gallons. Utility plants have storage facilities of 30,000 to 60,000 gallons.

NOW is time to convert Farm POWER MACHINERY



to LP-GAS fuel!

You LPG dealers can do your farmer friends a real service by converting to LP-GAS their tractors, combines, special crop harvesters, forage choppers, power pumps, spray rigs, stationary engines, cotton pickers, crop drier blowers and other power machinery. At the same time you'll be stepping up your LPG sales! Every conversion means extra gallonage for you!

You'll also find there is no other LPG carburetion unit like the compact, simple and efficient

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for easy installation, long-lasting satisfaction and economical operation. Ask your mechanic—he knows the difference.

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Butane Manifolds for International "H" & "M"

Butane Manifolds for Allis Chalmers "W" "WC," "WA," "WF"

Water Pumps for John Deere Models "G," "A" & "B"

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OUR PREFERENCE IS TO WORK WITH experienced L. P. G. men. Write us. Oil Industry Employment Service, 405 Tuloma Bldg., Tulsa, Okla.

WANTED : COMPANY ESTABLISHED over twenty years wants high grade service man for installations and service commercial equipment. Straight time, good pay, paid vacation. Married man about 25 to 40 years of age preferred. Write Box 450, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

WANTED : MANAGER TO OPERATE and manage retail L. P. gas and appliance company located in California Sierra-Nevada region. Will pay substantial salary, plus percentage of earnings with opportunity to purchase interest when ability has been demonstrated. Must be able to furnish best of references as to character and ability. Write Box 420, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

WANTED : FIRST CLASS EXPERIENCED L. P. gas service man. Must be sober, honest and able to furnish best of references as to character and experience. Write Box 425, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

SERVICE MANAGER. MAN HIGHLY qualified by experience and technical know-how to direct all phases of service, installation and gas delivery. Involves force of forty to fifty men, several bulk plants, branch offices, etc. This job offers permanent opportunity with strong company in Southeast metropolitan area. Hospitalization, paid vacations and other benefits. Give complete information and send photo. Write Box 430, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

WANTED : SALES REPRESENTATIVE for LPG Equipment Manufacturer and Distributor. To cover Eastern Kansas, Eastern Oklahoma, Missouri, and Arkansas. Salary plus commission. Please give full details including experience in first letter. Write Lubbock Machine & Supply Co., Inc., Drawer 1589, Lubbock, Texas.

SITUATIONS WANTED

INSTALLATION AND SERVICE MAN wants work in Northwest. Several years L. P. experience. Write Box 335, BUTANE-PROPANE News, 198 South Alvarado St., Los Angeles 57, Calif.

SERVICE AND INSTALLATION SUPERVISOR, fifteen years experience with all types of gases, desires to locate in Southwest. Write Box 435, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

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RETAIL BOTTLE AND BULK PLANT priced to sell. Middle-west. Write Box 445, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

Display-classified advertising rates can be secured by writing publisher. For regular classified advertising, set in 7 point type without border or display, the rate is \$1.00 per line per insertion. Count each letter and space between words and allow 46 letters and spaces per line. Minimum charge is \$3.00 per insertion. Classified advertising payable in advance. Copy and payment must reach publisher's office prior to fifth of month preceding date of publication.

BUSINESS OPPOR. OFFERED - Cont.

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JUST ONE 8-LINE CLASSIFIED AD IN A SINGLE ISSUE OF BUTANE-PROPANE News SOLD THIS BUSINESS. This is typical of the QUICK RESULTS you get from classified ads in B-P News.

FOR SALE : LPG BOTTLE AND BULK business, located in Southern California. Approximately 450 cylinder accounts and 125 bulk accounts. Business includes four trucks, storage and loading plant. Will sell or lease property to buyer. Customers, trucks storage and loading plant priced at \$21,500.00. Terms available. Write Box 455, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

FOR SALE — PROPANE GAS PLANT IN central South Dakota. 40,000 gallon storage, 300 100# cylinders, 1 Chevrolet tank truck 1200 gallon, 1 Chevrolet flat bed, 1 new Ford pickup with service body. Serving approximately 450 cylinder and 325 tank customers. Will gross over \$60,000 a year. New 2 bedroom home built this year. Immediate possession: \$90,000. Reason for selling—other interests. Write Box 487, Philip, South Dakota.

ANNOUNCING THE OPENING OF A new service to the L. P. gas industry. Twenty-three years' experience in the business from truck operator to wholesale distributor. We come in contact with many people engaged in the business. Give us your listings—either to buy or sell L. P. gas properties. We have a staff equipped to go anywhere at anytime. All listings treated as confidential. Satisfaction guaranteed. The George Self Agency, Ponca City, Oklahoma.

DISTRIBUTOR TO TAKE OVER GOING propane business in Oregon. Investment required for trucks, inventory, etc. \$15,000.00. Yearly sales: 400,000 gallons. Necessary facilities for complete operation provided. Write Box 440, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

BUSINESS OPPORTUNITIES WANTED

WILL BUY L. P. GAS BUSINESS, 2000 customers or larger, with or without storage; should be located where further expansion is possible. Write Box 385, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

FOR SALE — TANKS AND CYLINDERS

AT DEPRECIATED PRICE, 800-60#-4B240 Pressed Steel Tank Company cylinders. City Gas Service, Inc., Wisconsin Rapids, Wisconsin.

FOR SALE—TANKS-CYLINDERS - Cont.

CYLINDERS ICC, 4B240. BRAND NEW. 100 lbs. capacity, TW 70 lbs. \$13.95, valve extra. Also 20 lb. capacity with Rego valve complete, \$9.45. Lower prices for large quantity orders. A complete stock of regulators and fittings for immediate shipment. F. O. B. Cleveland, Ohio. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland 15, Ohio.

2,000 CYLINDERS—ICC 7C116 OR SIMILAR, 65 lb. butane capacity—less valves—a lot of utility at low cost. Conservative Gas Corporation, Jericho Turnpike and Denton Avenue, New Hyde Park, N. Y.

FOR SALE — TRUCKS AND TRAILERS

NEW : IMMEDIATE DELIVERY. 1400 WG U69 propane lightweight twin barrel delivery unit. Mounted on new 1953 2-ton, 2-speed Chevrolet truck. Fill and vapor hose assemblies—Viking Mechanical Seal Pump—power take-off assembly. READY TO GO FOR \$3845.00 tax paid. Also available at low extra cost: meters—fire extinguisher—motor fuel tank and L. P. carburator. American Tank & Manufacturing Co., 2136 West Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

NEED A WORKHORSE? WE HAVE NEW 1953 Model 353 GMCs; 2 ton, 2 speed, w/8.25 tires equipped with a 1400 WG Nor-Tex Standard Twin Propane unit. It's skirted, plumbed and perfectly balanced! Complete with recessed fuel tank, Viking KK190 pump with mechanical seal, 50' filler hose, ICC lights and power take-off with spline jack shaft. Finish is aluminum paint over red oxide. Tax paid and ready to go. \$4043.80 FOB North Texas Tank Co., Box 519, Phone Central 5416, Denton, Texas.

A PACKAGE UNIT SPECIAL! A NEW 1953 2 ton, 2 speed Chevrolet equipped with 1250 WG Nor-Tex Standard Twin Propane Unit. It's skirted, plumbed and perfectly balanced! Complete with recessed fuel tank, Viking KK190 pump with mechanical seal, 50' filler hose, ICC lights and power take-off with spline jack shaft. Finish is aluminum paint over red oxide. Tax paid and ready to go \$3919.85 FOB North Texas Tank Co., Box 519, Phone Central 5416, Denton, Texas.

FOR SALE : 1951 INTERNATIONAL heavy duty one-ton truck, 2 speed axle, 600 W.G. propane tank, Pittsburgh meter, Viking pump, 50 ft. hose. Used for stand-by unit. Good condition and ready to go. Price: \$1995.00. Home Hydro Gas Co., Shelbia, Missouri.

LIKE NEW—TWO .6670 WATER GALLON propane trailers—will meet all specifications—twin barrel. Brand new tires. \$6800.00. Write Box 326, Stafford, Kansas. Phone 326.

TWO USED PROPANE DELIVERY trucks. 1947 Ford 1250 gals. 1946 Ford 1000 gals. Your choice \$1800.00. Both complete ready to deliver fuel. Smith pumps, Pittsburgh Meters, 50 ft. hoses, 250 lb. W.P. tanks. Valley Butane and Appliance, Merced, California, Phone RAndolph 2-5661.

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FOR SALE—TRUCKS - Cont.

SPECIAL: AMERICAN "BETTER-BILT" lightweight 1400 water gallon U69 propane twin barrel delivery unit, with Viking Mechanical Seal Pump—Neptune Print-O-Meter—fill and vapor hose assembly—mounted on new 1953 2-ton, 2-speed GMC; 125 hp engine with 8.25 tires—READY FOR SERVICE. PRICED AT \$4475.00 tax paid FOB Dallas. Other sizes available at comparable low cost. American Tank & Manufacturing Co., 2136 W. Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

ONE FRUEHAUF TRAILER, MOUNTED with L.P.G. transport tank, W.C. 1550 gallons, in A-1 shape. Priced at \$2,000.00 for quick sale. Contact Wrightwood Fuel Company, Wrightwood, California, phone Wrightwood No. 9.

PERFECTION PLUS! A NEW 1400 WG twin Trinity model #103 propane unit with double door rear compartment, housing Neptune #433 Print-O-Meter and remote control Okade valves; excise tax paid, KK190 Viking pump, PTO&DS, plumbing, ICC and directional lights, fuel tank, filler hose, white enamel, mounted on 1953 2-ton 2-speed F-600 Ford or #6400 Chevrolet chassis. \$4550.00 FOB Trinity Steel Co., Inc., 3301 S. Lamar, H'Unter 8321, Dallas, Texas.

SPECIAL—ONE, ONLY NEW 46" DIA. 1000 WG single barrel propane unit, fully skirted with double door rear compartment, fuel tank, KK190 Viking pump, plumbed, ICC light, filler hose, PTO & DS, tax paid, white enamel, ready to go on new 1953 2-ton 2-speed Chevrolet chassis. \$3450.00 FOB Trinity Steel Co., Inc., 3301 S. Lamar, H'Unter 8321, Dallas, Texas.

FOR SALE—MISCELLANEOUS

GALVANIZED HOOD, STAND, AND BASE to protect your two cylinder installation; \$5.45 each. Packed 10 to a carton. Also Rego or Fisher 2-cylinder regulator, T block, and 2 pigtails at \$4.65 each. Sold on satisfaction or money refunded. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland, Ohio.

COPPER TUBING— $\frac{3}{8}$ " OD X .032 WALL—50 ft. coils, lots of 10 or more \$5.35 per coil. Less than 10 add 50¢ per coil. Freight prepaid on 20 or more coils. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland, Ohio.

ALUMINUM CYLINDER PAINT. EXTRA heavy body, long lasting, 10 minute drying, for spray or brushing. List price \$4.30 per gallon. Your cost \$2.85 per gallon. Freight prepaid in lots of 20 gallons or more. Finest quality paint you can buy for bulk tanks or cylinders. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland 15, Ohio.

FREE FREE FREE
With purchase of six (6) "Leak Detecto Brushes" at \$3.75 each, Free: one gallon Detecto Solution. For limited time. Gas Appliance Stores, Inc., Box 5057, Columbia, S. C.

SURE, WE COULD BUILD CHEAPER Smith Pumps, but they would cost you more in the long run. See our ad on page 23. Smith Precision Products Company, 1135 Mission Street, South Pasadena, California.

NEW UNIVERSAL ORIFICES SIMPLIFY gas range conversions to or from any type gas—butane, propane, natural, mixed or manufactured. Needle points $7\frac{1}{4}$ ¢ each, hoods $6\frac{1}{4}$ ¢ each. If you use range orifices you need Universals. Natural gas needles and hoods, L.P. fixed hoods and spuds also available. MARSH'S, 3536 Lamar, Memphis 18, Tenn.

TWO SETS F-8 FORD HEADS FILLED and milled 9 to 1 comp. ratio. New cost \$90.00. Sacrifice \$65.00 set. Guaranteed. Baker Liquid Gas Co., Baker, Oregon.

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FOR SALE—MISC. - Cont.

Equipment for Sale?

39 people answered a B-P News classified ad offering a 30,000-gallon storage tank—and 12 OF THE REPLIES WERE TELEGRAMS. You get quick results from B-P News classified ads.

L. P. GAS CIGARETTE LIGHTERS at wholesale prices. Finest quality and performance. See our ad page 145. MARSH'S, 3536 Lamar, Memphis 18, Tenn.

FOR SALE—IMMEDIATE DELIVERY! Eureka Smokehouse Burner Assemblies! For meat smoke houses using bottled gas. Completely automatic. Clean filtered smoke. Distributes heat uniformly. Low gas consumption. Automatic temperature and pilot control. Less product shrinkage. Easily installed. Write for descriptive pamphlet. Eureka Equipment Company, P. O. Box 396, Beloit, Wisconsin.

CLOSE OUT — COROAIRe DUCTLESS furnace—\$55-LP—Consoles, complete, incl. wall thermo. 75,000 Btu. Have 20, all LP, new, in crates. '53 units, \$179.50 each, f.o.b. Des Moines. Best LP heater made, heat exchanger guaranteed 25 years. FEDERAL DISTRIBUTING CO., 317 11th St., Des Moines, Iowa. Phone 3-0579.

NEW ANCHOR WIRE BRAID HOSE INVENTORY REDUCTION

	SIZE	PRICE	FROM	REDUCED
10 OW	1/2-in.	\$54 per ft.	\$67 per ft.	
12 OW	2 3/8-in.	.61 per ft.	.74 per ft.	
16 OW	1-in.	.72 per ft.	.88 per ft.	
20 OW	1 1/4-in.	.84 per ft.	.99 per ft.	
24 OW	1 1/2-in.	.97 per ft.	1.14 per ft.	

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Washers and Dryers Continue Sales Gains

Factory sales of standard-size household washers in July totaled 228,268 units, according to figures for its membership, announced in Chicago recently by the American Home Laundry Manufacturers' Association. This was a decrease of 24.9% from sales of 304,086 washers in the preceding month, and an advance of 10% over 207,593 in July, 1952.

Factory sales of automatic tumbler dryers in July aggregated 33,296 units, as against 32,789 in June, up 1.5%, and compared to 33,858 in July last year, a decrease of 1.7%.

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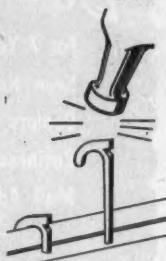


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